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(71) Applicant (for all designated States except US): HYSEQ, INC. [US/US]; 670 Almanor Avenue, Sunnyvale, CA 94086 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): TANG, Y., Tom [US/US]; 4230 Ranwick Court, San Jose, CA 95118 (US). LIU, Chenghua [CN/US]; 1125 Ranchero Way #14, San Jose, CA 95117 (US). ZHOU, Ping [CN/US]; 1461 Japaur Lane, San Jose, CA 95132 (US). QIAN, Xiaohong, B. [CN/US]; 3662 Tumble Way, San Jose, CA 95132 (US). WANG, Zhiwei [CN/US]; 836 Alturas Avenue #B36,

Sunnyvale, CA 94085 (US). CHEN, Rui-Hong [US/US]; 1031 Flying Fish Street, Foster City, CA 94404 (US). ASUNDI, Vinod [US/US]; 709 Foster City Boulevard, Foster City, CA 94404 (US). CAO, Vicheng [CN/US]; 260 North Mathilda Avenue, Sunnyvale, CA 95086 (US). DRMANAC, Radoje, A. [YU/US]; 850 East Greenwich Place, Palo Alto, CA 94303 (US). ZHANG, Jie [CN/US]; 20800 Homestead Road #38B, Cupertino, CA 95014 (US). WERHMAN, Tom [US/US]; 300 Pasteur Drive, Edwards, R314, Stanford University Medical Center, Stanford, CA 94035 (US).

- (74) Agent: ELRIFI, Ivor, R.; Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., One Financial Center, Boston, MA 02111 (US).
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

#### NOVEL NUCLEIC ACIDS AND POLYPEPTIDES

#### 1. TECHNICAL FIELD

The present invention provides novel polynucleotides and proteins encoded by such polynucleotides, along with uses for these polynucleotides and proteins, for example in therapeutic, diagnostic and research methods.

#### 2. BACKGROUND

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Technology aimed at the discovery of protein factors (including e.g., cytokines, such as lymphokines, interferons, CSFs, chemokines, and interleukins) has matured rapidly over the past decade. The now routine hybridization cloning and expression cloning techniques clone novel polynucleotides "directly" in the sense that they rely on information directly related to the discovered protein (i.e., partial DNA/amino acid sequence of the protein in the case of hybridization cloning; activity of the protein in the case of expression cloning). More recent "indirect" cloning techniques such as signal sequence cloning, which isolates DNA sequences based on the presence of a now well-recognized secretory leader sequence motif, as well as various PCR-based or low stringency hybridization-based cloning techniques, have advanced the state of the art by making available large numbers of DNA/amino acid sequences for proteins that are known to have biological activity, for example, by virtue of their secreted nature in the case of leader sequence cloning, by virtue of their cell or tissue source in the case of PCR-based techniques, or by virtue of structural similarity to other genes of known biological activity.

Identified polynucleotide and polypeptide sequences have numerous applications in, for example, diagnostics, forensics, gene mapping; identification of mutations responsible for genetic disorders or other traits, to assess biodiversity, and to produce many other types of data and products dependent on DNA and amino acid sequences.

#### 3. SUMMARY OF THE INVENTION

The compositions of the present invention include novel isolated polypeptides, novel isolated polynucleotides encoding such polypeptides, including recombinant DNA molecules, cloned genes or degenerate variants thereof, especially naturally occurring variants such as allelic variants, antisense polynucleotide molecules, and antibodies that specifically recognize one or more epitopes present on such polypeptides, as well as hybridomas producing such antibodies.

The compositions of the present invention additionally include vectors, including expression vectors, containing the polynucleotides of the invention, cells genetically engineered to contain such polynucleotides and cells genetically engineered to express such polynucleotides.

The present invention relates to a collection or library of at least one novel nucleic acid sequence assembled from expressed sequence tags (ESTs) isolated mainly by sequencing by hybridization (SBH), and in some cases, sequences obtained from one or more public databases. The invention relates also to the proteins encoded by such polynucleotides, along with therapeutic, diagnostic and research utilities for these polynucleotides and proteins. These nucleic acid sequences are designated as SEQ ID NO: 1-1009. The polypeptides sequences are designated SEQ ID NO: 1010-2018. The nucleic acids and polypeptides are provided in the Sequence Listing. In the nucleic acids provided in the Sequence Listing, A is adenosine; C is cytosine; G is guanine; T is thymine; and N is any of the four bases. In the amino acids provided in the Sequence Listing, \* corresponds to the stop codon.

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The nucleic acid sequences of the present invention also include, nucleic acid sequences that hybridize to the complement of SEQ ID NO:1-1009 under stringent hybridization conditions; nucleic acid sequences which are allelic variants or species homologues of any of the nucleic acid sequences recited above, or nucleic acid sequences that encode a peptide comprising a specific domain or truncation of the peptides encoded by SEQ ID NO:1-1009. A polynucleotide comprising a nucleotide sequence having at least 90% identity to an identifying sequence of SEQ ID NO:1-1009 or a degenerate variant or fragment thereof. The identifying sequence can be 100 base pairs in length.

The nucleic acid sequences of the present invention also include the sequence information from the nucleic acid sequences of SEQ ID NO:1-1009. The sequence information can be a segment of any one of SEQ ID NO:1-1009 that uniquely identifies or represents the sequence information of SEQ ID NO:1-1009.

A collection as used in this application can be a collection of only one polynucleotide. The collection of sequence information or identifying information of each sequence can be provided on a nucleic acid array. In one embodiment, segments of sequence information is provided on a nucleic acid array to detect the polynucleotide that contains the segment. The array can be designed to detect full-match or mismatch to the polynucleotide that contains the segment. The collection can also be provided in a computer-readable format.

This invention also includes the reverse or direct complement of any of the nucleic acid sequences recited above; cloning or expression vectors containing the nucleic acid sequences; and host cells or organisms transformed with these expression vectors. Nucleic acid sequences (or their reverse or direct complements) according to the invention have numerous applications in a variety of techniques known to those skilled in the art of molecular biology, such as use as hybridization probes, use as primers for PCR, use in an array, use in computer-readable media, use in sequencing

full-length genes, use for chromosome and gene mapping, use in the recombinant production of protein, and use in the generation of anti-sense DNA or RNA, their chemical analogs and the like.

In a preferred embodiment, the nucleic acid sequences of SEQ ID NO:1-1009 or novel segments or parts of the nucleic acids of the invention are used as primers in expression assays that are well known in the art. In a particularly preferred embodiment, the nucleic acid sequences of SEQ ID NO:1-1009 or novel segments or parts of the nucleic acids provided herein are used in diagnostics for identifying expressed genes or, as well known in the art and exemplified by Vollrath et al., Science 258:52-59 (1992), as expressed sequence tags for physical mapping of the human genome.

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The isolated polynucleotides of the invention include, but are not limited to, a polynucleotide comprising any one of the nucleotide sequences set forth in SEQ ID NO:1-1009; a polynucleotide comprising any of the full length protein coding sequences of SEQ ID NO:1 - 1009; and a polynucleotide comprising any of the nucleotide sequences of the mature protein coding sequences of SEQ ID NO: 1- 1009. The polynucleotides of the present invention also include, but are not limited to, a polynucleotide that hybridizes under stringent hybridization conditions to (a) the complement of any one of the nucleotide sequences set forth in SEQ ID NO:1-1009; (b) a nucleotide sequence encoding any one of the amino acid sequences set forth in the Sequence Listing (e.g., SEQ ID NO: 1010-2018); (c) a polynucleotide which is an allelic variant of any polynucleotides recited above; (d) a polynucleotide which encodes a species homolog (e.g. orthologs) of any of the proteins recited above; or (e) a polynucleotide that encodes a polypeptide comprising a specific domain or truncation of any of the polypeptides comprising an amino acid sequence set forth in the Sequence Listing.

The isolated polypeptides of the invention include, but are not limited to, a polypeptide comprising any of the amino acid sequences set forth in the Sequence Listing; or the corresponding full length or mature protein. Polypeptides of the invention also include polypeptides with biological activity that are encoded by (a) any of the polynucleotides having a nucleotide sequence set forth in SEQ ID NO:1-1009; or (b) polynucleotides that hybridize to the complement of the polynucleotides of (a) under stringent hybridization conditions. Biologically or immunologically active variants of any of the polypeptide sequences in the Sequence Listing, and "substantial equivalents" thereof (e.g., with at least about 65%, 70%, 75%, 80%, 85%, 90%, 95%, 98% or 99% amino acid sequence identity) that preferably retain biological activity are also contemplated. The polypeptides of the invention may be wholly or partially chemically synthesized but are preferably produced by recombinant means using the genetically engineered cells (e.g. host cells) of the invention.

The invention also provides compositions comprising a polypeptide of the invention. Polypeptide compositions of the invention may further comprise an acceptable carrier, such as a hydrophilic, e.g., pharmaceutically acceptable, carrier.

The invention also provides host cells transformed or transfected with a polynucleotide of the invention.

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The invention also relates to methods for producing a polypeptide of the invention comprising growing a culture of the host cells of the invention in a suitable culture medium under conditions permitting expression of the desired polypeptide, and purifying the polypeptide from the culture or from the host cells. Preferred embodiments include those in which the protein produced by such process is a mature form of the protein.

Polynucleotides according to the invention have numerous applications in a variety of techniques known to those skilled in the art of molecular biology. These techniques include use as hybridization probes, use as oligomers, or primers, for PCR, use for chromosome and gene mapping, use in the recombinant production of protein, and use in generation of anti-sense DNA or RNA, their chemical analogs and the like. For example, when the expression of an mRNA is largely restricted to a particular cell or tissue type, polynucleotides of the invention can be used as hybridization probes to detect the presence of the particular cell or tissue mRNA in a sample using, e.g., in situ hybridization.

In other exemplary embodiments, the polynucleotides are used in diagnostics as expressed sequence tags for identifying expressed genes or, as well known in the art and exemplified by Vollrath et al., Science 258:52-59 (1992), as expressed sequence tags for physical mapping of the human genome.

The polypeptides according to the invention can be used in a variety of conventional procedures and methods that are currently applied to other proteins. For example, a polypeptide of the invention can be used to generate an antibody that specifically binds the polypeptide. Such antibodies, particularly monoclonal antibodies, are useful for detecting or quantitating the polypeptide in tissue. The polypeptides of the invention can also be used as molecular weight markers, and as a food supplement.

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Methods are also provided for preventing, treating, or ameliorating a medical condition which comprises the step of administering to a mammalian subject a therapeutically effective amount of a composition comprising a polypeptide of the present invention and a pharmaceutically acceptable carrier.

In particular, the polypeptides and polynucleotides of the invention can be utilized, for example, in methods for the prevention and/or treatment of disorders involving aberrant protein expression or biological activity.

The present invention further relates to methods for detecting the presence of the polynucleotides or polypeptides of the invention in a sample. Such methods can, for example, be utilized as part of prognostic and diagnostic evaluation of disorders as recited herein and for the identification of subjects exhibiting a predisposition to such conditions. The invention provides a method for detecting the polynucleotides of the invention in a sample, comprising contacting the sample with a compound that binds to and forms a complex with the polynucleotide of interest for a period sufficient to form the complex and under conditions sufficient to form a complex and detecting the complex such that if a complex is detected, the polynucleotide of interest is detected. The invention also provides a method for detecting the polypeptides of the invention in a sample comprising contacting the sample with a compound that binds to and forms a complex with the polypeptide under conditions and for a period sufficient to form the complex and detecting the formation of the complex such that if a complex is formed, the polypeptide is detected.

The invention also provides kits comprising polynucleotide probes and/or monoclonal antibodies, and optionally quantitative standards, for carrying out methods of the invention. Furthermore, the invention provides methods for evaluating the efficacy of drugs, and monitoring the progress of patients, involved in clinical trials for the treatment of disorders as recited above.

The invention also provides methods for the identification of compounds that modulate (i.e., increase or decrease) the expression or activity of the polynucleotides and/or polypeptides of the invention. Such methods can be utilized, for example, for the identification of compounds that can ameliorate symptoms of disorders as recited herein. Such methods can include, but are not limited to, assays for identifying compounds and other substances that interact with (e.g., bind to) the polypeptides of the invention. The invention provides a method for identifying a compound that binds to the polypeptides of the invention comprising contacting the compound with a polypeptide of the invention in a cell for a time sufficient to form a polypeptide/compound complex, wherein the complex drives expression of a reporter gene sequence in the cell; and detecting the complex by detecting the reporter gene sequence expression such that if expression of the reporter gene is detected the compound the binds to a polypeptide of the invention is identified.

The methods of the invention also provides methods for treatment which involve the administration of the polynucleotides or polypeptides of the invention to individuals exhibiting symptoms or tendencies. In addition, the invention encompasses methods for treating diseases or disorders as recited herein comprising administering compounds and other substances that modulate the overall activity of the target gene products. Compounds and other substances can

effect such modulation either on the level of target gene/protein expression or target protein activity.

The polypeptides of the present invention and the polynucleotides encoding them are also useful for the same functions known to one of skill in the art as the polypeptides and polynucleotides to which they have homology (set forth in Table 2). If no homology is set forth for a sequence, then the polypeptides and polynucleotides of the present invention are useful for a variety of applications, as described herein, including use in arrays for detection.

#### 4. DETAILED DESCRIPTION OF THE INVENTION

#### 4.1 DEFINITIONS

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It must be noted that as used herein and in the appended claims, the singular forms "a", "an" and "the" include plural references unless the context clearly dictates otherwise.

The term "active" refers to those forms of the polypeptide which retain the biologic and/or immunologic activities of any naturally occurring polypeptide. According to the invention, the terms "biologically active" or "biological activity" refer to a protein or peptide having structural, regulatory or biochemical functions of a naturally occurring molecule. Likewise "immunologically active" or "immunological activity" refers to the capability of the natural, recombinant or synthetic polypeptide to induce a specific immune response in appropriate animals or cells and to bind with specific antibodies.

The term "activated cells" as used in this application are those cells which are engaged in extracellular or intracellular membrane trafficking, including the export of secretory or enzymatic molecules as part of a normal or disease process.

The terms "complementary" or "complementarity" refer to the natural binding of polynucleotides by base pairing. For example, the sequence 5'-AGT-3' binds to the complementary sequence 3'-TCA-5'. Complementarity between two single-stranded molecules may be "partial" such that only some of the nucleic acids bind or it may be "complete" such that total complementarity exists between the single stranded molecules. The degree of complementarity between the nucleic acid strands has significant effects on the efficiency and strength of the hybridization between the nucleic acid strands.

The term "embryonic stem cells (ES)" refers to a cell that can give rise to many differentiated cell types in an embryo or an adult, including the germ cells. The term "germ line stem cells (GSCs)" refers to stem cells derived from primordial stem cells that provide a steady and continuous source of germ cells for the production of gametes. The term "primordial germ

cells (PGCs)" refers to a small population of cells set aside from other cell lineages particularly from the yolk sac, mesenteries, or gonadal ridges during embryogenesis that have the potential to differentiate into germ cells and other cells. PGCs are the source from which GSCs and ES cells are derived. The PGCs, the GSCs and the ES cells are capable of self-renewal. Thus these cells not only populate the germ line and give rise to a plurality of terminally differentiated cells that comprise the adult specialized organs, but are able to regenerate themselves.

The term "expression modulating fragment," EMF, means a series of nucleotides which modulates the expression of an operably linked ORF or another EMF.

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As used herein, a sequence is said to "modulate the expression of an operably linked sequence" when the expression of the sequence is altered by the presence of the EMF. EMFs include, but are not limited to, promoters, and promoter modulating sequences (inducible elements). One class of EMFs are nucleic acid fragments which induce the expression of an operably linked ORF in response to a specific regulatory factor or physiological event.

The terms "nucleotide sequence" or "nucleic acid" or "polynucleotide" or "oligonculeotide" are used interchangeably and refer to a heteropolymer of nucleotides or the sequence of these nucleotides. These phrases also refer to DNA or RNA of genomic or synthetic origin which may be single-stranded or double-stranded and may represent the sense or the antisense strand, to peptide nucleic acid (PNA) or to any DNA-like or RNA-like material. In the sequences herein A is adenine, C is cytosine, T is thymine, G is guanine and N is A, C, G or T (U). It is contemplated that where the polynucleotide is RNA, the T (thymine) in the sequences provided herein is substituted with U (uracil). Generally, nucleic acid segments provided by this invention may be assembled from fragments of the genome and short oligonucleotide linkers, or from a series of oligonucleotides, or from individual nucleotides, to provide a synthetic nucleic acid which is capable of being expressed in a recombinant transcriptional unit comprising regulatory elements derived from a microbial or viral operon, or a eukaryotic gene.

The terms "oligonucleotide fragment" or a "polynucleotide fragment", "portion," or "segment" or "probe" or "primer" are used interchangeably and refer to a sequence of nucleotide residues which are at least about 5 nucleotides, more preferably at least about 7 nucleotides, more preferably at least about 11 nucleotides and most preferably at least about 17 nucleotides. The fragment is preferably less than about 500 nucleotides, preferably less than about 200 nucleotides, more preferably less than about 100 nucleotides, more preferably less than about 50 nucleotides and most preferably less than 30 nucleotides. Preferably the probe is from about 6 nucleotides to about 200 nucleotides, preferably from about 15 to about 50 nucleotides, more preferably from about 17 to 30 nucleotides and most preferably from about 15 nucleotides. Preferably the fragments can

be used in polymerase chain reaction (PCR), various hybridization procedures or microarray procedures to identify or amplify identical or related parts of mRNA or DNA molecules. A fragment or segment may uniquely identify each polynucleotide sequence of the present invention. Preferably the fragment comprises a sequence substantially similar to any one of SEQ ID NOs:1-1009.

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Probes may, for example, be used to determine whether specific mRNA molecules are present in a cell or tissue or to isolate similar nucleic acid sequences from chromosomal DNA as described by Walsh et al. (Walsh, P.S. et al., 1992, PCR Methods Appl 1:241-250). They may be labeled by nick translation, Klenow fill-in reaction, PCR, or other methods well known in the art. Probes of the present invention, their preparation and/or labeling are elaborated in Sambrook, J. et al., 1989, Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory, NY; or Ausubel, F.M. et al., 1989, Current Protocols in Molecular Biology, John Wiley & Sons, New York NY, both of which are incorporated herein by reference in their entirety.

The nucleic acid sequences of the present invention also include the sequence information from the nucleic acid sequences of SEQ ID NO:1-1009. The sequence information can be a segment of any one of SEQ ID NO:1-1009 that uniquely identifies or represents the sequence information of that sequence of SEQ ID NO:1-1009. One such segment can be a twenty-mer nucleic acid sequence because the probability that a twenty-mer is fully matched in the human genome is 1 in 300. In the human genome, there are three billion base pairs in one set of chromosomes. Because 4<sup>20</sup> possible twenty-mers exist, there are 300 times more twenty-mers than there are base pairs in a set of human chromosomes. Using the same analysis, the probability for a seventeen-mer to be fully matched in the human genome is approximately 1 in 5. When these segments are used in arrays for expression studies, fifteen-mer segments can be used. The probability that the fifteen-mer is fully matched in the expressed sequences is also approximately one in five because expressed sequences comprise less than approximately 5% of the entire genome sequence.

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Similarly, when using sequence information for detecting a single mismatch, a segment can be a twenty-five mer. The probability that the twenty-five mer would appear in a human genome with a single mismatch is calculated by multiplying the probability for a full match  $(1 \div 4^{25})$  times the increased probability for mismatch at each nucleotide position  $(3 \times 25)$ . The probability that an eighteen mer with a single mismatch can be detected in an array for expression studies is approximately one in five. The probability that a twenty-mer with a single mismatch can be detected in a human genome is approximately one in five.

The term "open reading frame," ORF, means a series of nucleotide triplets coding for amino acids without any termination codons and is a sequence translatable into protein.

The terms "operably linked" or "operably associated" refer to functionally related nucleic acid sequences. For example, a promoter is operably associated or operably linked with a coding sequence if the promoter controls the transcription of the coding sequence. While operably linked nucleic acid sequences can be contiguous and in the same reading frame, certain genetic elements *e.g.* repressor genes are not contiguously linked to the coding sequence but still control transcription/translation of the coding sequence.

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The term "pluripotent" refers to the capability of a cell to differentiate into a number of differentiated cell types that are present in an adult organism. A pluripotent cell is restricted in its differentiation capability in comparison to a totipotent cell.

The terms "polypeptide" or "peptide" or "amino acid sequence" refer to an oligopeptide, peptide, polypeptide or protein sequence or fragment thereof and to naturally occurring or synthetic molecules. A polypeptide "fragment," "portion," or "segment" is a stretch of amino acid residues of at least about 5 amino acids, preferably at least about 7 amino acids, more preferably at least about 9 amino acids and most preferably at least about 17 or more amino acids. The peptide preferably is not greater than about 200 amino acids, more preferably less than 150 amino acids and most preferably less than 100 amino acids. Preferably the peptide is from about 5 to about 200 amino acids. To be active, any polypeptide must have sufficient length to display biological and/or immunological activity.

The term "naturally occurring polypeptide" refers to polypeptides produced by cells that have not been genetically engineered and specifically contemplates various polypeptides arising from post-translational modifications of the polypeptide including, but not limited to, acetylation, carboxylation, glycosylation, phosphorylation, lipidation and acylation.

The term "translated protein coding portion" means a sequence which encodes for the full length protein which may include any leader sequence or any processing sequence.

The term "mature protein coding sequence" means a sequence which encodes a peptide or protein without a signal or leader sequence. The "mature protein portion" means that portion of the protein which does not include a signal or leader sequence. The peptide may have been produced by processing in the cell which removes any leader/signal sequence. The mature protein portion may or may not include the initial methionine residue. The methionine residue may be removed from the protein during processing in the cell. The peptide may be produced synthetically or the protein may have been produced using a polynucleotide only encoding for the mature protein coding sequence.

The term "derivative" refers to polypeptides chemically modified by such techniques as ubiquitination, labeling (e.g., with radionuclides or various enzymes), covalent polymer attachment such as pegylation (derivatization with polyethylene glycol) and insertion or substitution by chemical synthesis of amino acids such as ornithine, which do not normally occur in human proteins.

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The term "variant" (or "analog") refers to any polypeptide differing from naturally occurring polypeptides by amino acid insertions, deletions, and substitutions, created using, e.g., recombinant DNA techniques. Guidance in determining which amino acid residues may be replaced, added or deleted without abolishing activities of interest, may be found by comparing the sequence of the particular polypeptide with that of homologous peptides and minimizing the number of amino acid sequence changes made in regions of high homology (conserved regions) or by replacing amino acids with consensus sequence.

Alternatively, recombinant variants encoding these same or similar polypeptides may be synthesized or selected by making use of the "redundancy" in the genetic code. Various codon substitutions, such as the silent changes which produce various restriction sites, may be introduced to optimize cloning into a plasmid or viral vector or expression in a particular prokaryotic or eukaryotic system. Mutations in the polynucleotide sequence may be reflected in the polypeptide or domains of other peptides added to the polypeptide to modify the properties of any part of the polypeptide, to change characteristics such as ligand-binding affinities, interchain affinities, or degradation/turnover rate.

Preferably, amino acid "substitutions" are the result of replacing one amino acid with another amino acid having similar structural and/or chemical properties, *i.e.*, conservative amino acid replacements. "Conservative" amino acid substitutions may be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity, and/or the amphipathic nature of the residues involved. For example, nonpolar (hydrophobic) amino acids include alanine, leucine, isoleucine, valine, proline, phenylalanine, tryptophan, and methionine; polar neutral amino acids include glycine, serine, threonine, cysteine, tyrosine, asparagine, and glutamine; positively charged (basic) amino acids include arginine, lysine, and histidine; and negatively charged (acidic) amino acids include aspartic acid and glutamic acid. "Insertions" or "deletions" are preferably in the range of about 1 to 20 amino acids, more preferably 1 to 10 amino acids. The variation allowed may be experimentally determined by systematically making insertions, deletions, or substitutions of amino acids in a polypeptide molecule using recombinant DNA techniques and assaying the resulting recombinant variants for activity.

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Alternatively, where alteration of function is desired, insertions, deletions or non-conservative alterations can be engineered to produce altered polypeptides. Such alterations

can, for example, alter one or more of the biological functions or biochemical characteristics of the polypeptides of the invention. For example, such alterations may change polypeptide characteristics such as ligand-binding affinities, interchain affinities, or degradation/turnover rate. Further, such alterations can be selected so as to generate polypeptides that are better suited for expression, scale up and the like in the host cells chosen for expression. For example, cysteine residues can be deleted or substituted with another amino acid residue in order to eliminate disulfide bridges.

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The terms "purified" or "substantially purified" as used herein denotes that the indicated nucleic acid or polypeptide is present in the substantial absence of other biological macromolecules, *e.g.*, polynucleotides, proteins, and the like. In one embodiment, the polynucleotide or polypeptide is purified such that it constitutes at least 95% by weight, more preferably at least 99% by weight, of the indicated biological macromolecules present (but water, buffers, and other small molecules, especially molecules having a molecular weight of less than 1000 daltons, can be present).

The term "isolated" as used herein refers to a nucleic acid or polypeptide separated from at least one other component (e.g., nucleic acid or polypeptide) present with the nucleic acid or polypeptide in its natural source. In one embodiment, the nucleic acid or polypeptide is found in the presence of (if anything) only a solvent, buffer, ion, or other component normally present in a solution of the same. The terms "isolated" and "purified" do not encompass nucleic acids or polypeptides present in their natural source.

The term "recombinant," when used herein to refer to a polypeptide or protein, means that a polypeptide or protein is derived from recombinant (e.g., microbial, insect, or mammalian) expression systems. "Microbial" refers to recombinant polypeptides or proteins made in bacterial or fungal (e.g., yeast) expression systems. As a product, "recombinant microbial" defines a polypeptide or protein essentially free of native endogenous substances and unaccompanied by associated native glycosylation. Polypeptides or proteins expressed in most bacterial cultures, e.g., E. coli, will be free of glycosylation modifications; polypeptides or proteins expressed in yeast will have a glycosylation pattern in general different from those expressed in mammalian cells.

The term "recombinant expression vehicle or vector" refers to a plasmid or phage or virus or vector, for expressing a polypeptide from a DNA (RNA) sequence. An expression vehicle can comprise a transcriptional unit comprising an assembly of (1) a genetic element or elements having a regulatory role in gene expression, for example, promoters or enhancers, (2) a structural or coding sequence which is transcribed into mRNA and translated into protein, and (3) appropriate transcription initiation and termination sequences. Structural units intended for use

in yeast or eukaryotic expression systems preferably include a leader sequence enabling extracellular secretion of translated protein by a host cell. Alternatively, where recombinant protein is expressed without a leader or transport sequence, it may include an amino terminal methionine residue. This residue may or may not be subsequently cleaved from the expressed recombinant protein to provide a final product.

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The term "recombinant expression system" means host cells which have stably integrated a recombinant transcriptional unit into chromosomal DNA or carry the recombinant transcriptional unit extrachromosomally. Recombinant expression systems as defined herein will express heterologous polypeptides or proteins upon induction of the regulatory elements linked to the DNA segment or synthetic gene to be expressed. This term also means host cells which have stably integrated a recombinant genetic element or elements having a regulatory role in gene expression, for example, promoters or enhancers. Recombinant expression systems as defined herein will express polypeptides or proteins endogenous to the cell upon induction of the regulatory elements linked to the endogenous DNA segment or gene to be expressed. The cells can be prokaryotic or eukaryotic.

The term "secreted" includes a protein that is transported across or through a membrane, including transport as a result of signal sequences in its amino acid sequence when it is expressed in a suitable host cell. "Secreted" proteins include without limitation proteins secreted wholly (e.g., soluble proteins) or partially (e.g., receptors) from the cell in which they are expressed. "Secreted" proteins also include without limitation proteins that are transported across the membrane of the endoplasmic reticulum. "Secreted" proteins are also intended to include proteins containing non-typical signal sequences (e.g. Interleukin-1 Beta, see Krasney, P.A. and Young, P.R. (1992) Cytokine 4(2):134-143) and factors released from damaged cells (e.g. Interleukin-1 Receptor Antagonist, see Arend, W.P. et. al. (1998) Annu. Rev. Immunol. 16:27-55)

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Where desired, an expression vector may be designed to contain a "signal or leader sequence" which will direct the polypeptide through the membrane of a cell. Such a sequence may be naturally present on the polypeptides of the present invention or provided from heterologous protein sources by recombinant DNA techniques.

The term "stringent" is used to refer to conditions that are commonly understood in the art as stringent. Stringent conditions can include highly stringent conditions (*i.e.*, hybridization to filter-bound DNA in 0.5 M NaHPO<sub>4</sub>, 7% sodium dodecyl sulfate (SDS), 1 mM EDTA at 65°C, and washing in 0.1X SSC/0.1% SDS at 68°C), and moderately stringent conditions (*i.e.*, washing in 0.2X SSC/0.1% SDS at 42°C). Other exemplary hybridization conditions are described herein in the examples.

In instances of hybridization of deoxyoligonucleotides, additional exemplary stringent hybridization conditions include washing in 6X SSC/0.05% sodium pyrophosphate at 37°C (for 14-base oligonucleotides), 48°C (for 17-base oligos), 55°C (for 20-base oligonucleotides), and 60°C (for 23-base oligonucleotides).

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As used herein, "substantially equivalent" can refer both to nucleotide and amino acid sequences, for example a mutant sequence, that varies from a reference sequence by one or more substitutions, deletions, or additions, the net effect of which does not result in an adverse functional dissimilarity between the reference and subject sequences. Typically, such a substantially equivalent sequence varies from one of those listed herein by no more than about 35% (i.e., the number of individual residue substitutions, additions, and/or deletions in a substantially equivalent sequence, as compared to the corresponding reference sequence, divided by the total number of residues in the substantially equivalent sequence is about 0.35 or less). Such a sequence is said to have 65% sequence identity to the listed sequence. In one embodiment, a substantially equivalent, e.g., mutant, sequence of the invention varies from a listed sequence by no more than 30% (70% sequence identity); in a variation of this embodiment, by no more than 25% (75% sequence identity); and in a further variation of this embodiment, by no more than 20% (80% sequence identity) and in a further variation of this embodiment, by no more than 10% (90% sequence identity) and in a further variation of this embodiment, by no more that 5% (95% sequence identity). Substantially equivalent, e.g., mutant, amino acid sequences according to the invention preferably have at least 80% sequence identity with a listed amino acid sequence, more preferably at least 85% sequence identity, more preferably at least 90% sequence identity, more preferably at least 95% identity, more preferably at least 98% identity, and most preferably at least 99% identity. Substantially equivalent nucleotide sequences of the invention can have lower percent sequence identities, taking into account, for example, the redundancy or degeneracy of the genetic code. Preferably, nucleotide sequence has at least about 65% identity, more preferably at least about 75% identity, more preferably at least about 80% sequence identity, more preferably at least about 85% sequence identity, more preferably at least about 90% sequence identity, and most preferably at least about 95% identity, more preferably at least about 98% sequence identity, and most preferably at least about 99% sequence identity. For the purposes of the present invention, sequences having substantially equivalent biological activity and substantially equivalent expression characteristics are considered substantially equivalent. For the purposes of determining equivalence, truncation of the mature sequence (e.g., via a mutation which creates a spurious stop codon) should be disregarded. Sequence identity may be determined, e.g., using the Jotun Hein method (Hein, J.

(1990) Methods Enzymol. 183:626-645). Identity between sequences can also be determined by other methods known in the art, e.g. by varying hybridization conditions.

The term "totipotent" refers to the capability of a cell to differentiate into all of the cell types of an adult organism.

The term "transformation" means introducing DNA into a suitable host cell so that the DNA is replicable, either as an extrachromosomal element, or by chromosomal integration. The term "transfection" refers to the taking up of an expression vector by a suitable host cell, whether or not any coding sequences are in fact expressed. The term "infection" refers to the introduction of nucleic acids into a suitable host cell by use of a virus or viral vector.

As used herein, an "uptake modulating fragment," UMF, means a series of nucleotides which mediate the uptake of a linked DNA fragment into a cell. UMFs can be readily identified using known UMFs as a target sequence or target motif with the computer-based systems described below. The presence and activity of a UMF can be confirmed by attaching the suspected UMF to a marker sequence. The resulting nucleic acid molecule is then incubated with an appropriate host under appropriate conditions and the uptake of the marker sequence is determined. As described above, a UMF will increase the frequency of uptake of a linked marker sequence.

Each of the above terms is meant to encompass all that is described for each, unless the context dictates otherwise.

#### 4.2 NUCLEIC ACIDS OF THE INVENTION

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Nucleotide sequences of the invention are set forth in the Sequence Listing.

The isolated polynucleotides of the invention include a polynucleotide comprising the nucleotide sequences of SEQ ID NO:1-1009; a polynucleotide encoding any one of the peptide sequences of SEQ ID NO:1010-2018; and a polynucleotide comprising the nucleotide sequence encoding the mature protein coding sequence of the polypeptides of any one of SEQ ID NO:1010-2018. The polynucleotides of the present invention also include, but are not limited to, a polynucleotide that hybridizes under stringent conditions to (a) the complement of any of the nucleotides sequences of SEQ ID NO:1-1009; (b) nucleotide sequences encoding any one of the amino acid sequences set forth in the Sequence Listing; (c) a polynucleotide which is an allelic variant of any polynucleotide recited above; (d) a polynucleotide which encodes a species homolog of any of the proteins recited above; or (e) a polynucleotide that encodes a polypeptide comprising a specific domain or truncation of the polypeptides of SEQ ID NO: 1010-2018. Domains of interest may depend on the nature of the encoded polypeptide; e.g., domains in receptor-like polypeptides include ligand-binding, extracellular, transmembrane, or cytoplasmic

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domains, or combinations thereof; domains in immunoglobulin-like proteins include the variable immunoglobulin-like domains; domains in enzyme-like polypeptides include catalytic and substrate binding domains; and domains in ligand polypeptides include receptor-binding domains.

The polynucleotides of the invention include naturally occurring or wholly or partially synthetic DNA, e.g., cDNA and genomic DNA, and RNA, e.g., mRNA. The polynucleotides may include all of the coding region of the cDNA or may represent a portion of the coding region of the cDNA.

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The present invention also provides genes corresponding to the cDNA sequences disclosed herein. The corresponding genes can be isolated in accordance with known methods using the sequence information disclosed herein. Such methods include the preparation of probes or primers from the disclosed sequence information for identification and/or amplification of genes in appropriate genomic libraries or other sources of genomic materials. Further 5' and 3' sequence can be obtained using methods known in the art. For example, full length cDNA or genomic DNA that corresponds to any of the polynucleotides of SEQ ID NO:1-1009 can be obtained by screening appropriate cDNA or genomic DNA libraries under suitable hybridization conditions using any of the polynucleotides of SEQ ID NO:1-1009 or a portion thereof as a probe. Alternatively, the polynucleotides of SEQ ID NO:1-1009 may be used as the basis for suitable primer(s) that allow identification and/or amplification of genes in appropriate genomic DNA or cDNA libraries.

The nucleic acid sequences of the invention can be assembled from ESTs and sequences (including cDNA and genomic sequences) obtained from one or more public databases, such as dbEST, gbpri, and UniGene. The EST sequences can provide identifying sequence information, representative fragment or segment information, or novel segment information for the full-length gene.

The polynucleotides of the invention also provide polynucleotides including nucleotide sequences that are substantially equivalent to the polynucleotides recited above. Polynucleotides according to the invention can have, e.g., at least about 65%, at least about 70%, at least about 75%, at least about 80%, 81%, 82%, 83%, 84%, more typically at least about 85%, 86%, 87%, 88%, 89%, more typically at least about 90%, 91%, 92%, 93%, 94%, and even more typically at least about 95%, 96%, 97%, 98%, 99%, sequence identity to a polynucleotide recited above.

Included within the scope of the nucleic acid sequences of the invention are nucleic acid sequence fragments that hybridize under stringent conditions to any of the nucleotide sequences of SEQ ID NO:1-1009, or complements thereof, which fragment is greater than about 5 nucleotides, preferably 7 nucleotides, more preferably greater than 9 nucleotides and most preferably greater than 17 nucleotides. Fragments of, e.g. 15, 17, or 20 nucleotides or more that

are selective for (*i.e.* specifically hybridize to any one of the polynucleotides of the invention) are contemplated. Probes capable of specifically hybridizing to a polynucleotide can differentiate polynucleotide sequences of the invention from other polynucleotide sequences in the same family of genes or can differentiate human genes from genes of other species, and are preferably based on unique nucleotide sequences.

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The sequences falling within the scope of the present invention are not limited to these specific sequences, but also include allelic and species variations thereof. Allelic and species variations can be routinely determined by comparing the sequence provided SEQ ID NO:1-1009, a representative fragment thereof, or a nucleotide sequence at least 90% identical, preferably 95% identical, to SEQ ID NO:1-1009 with a sequence from another isolate of the same species. Furthermore, to accommodate codon variability, the invention includes nucleic acid molecules coding for the same amino acid sequences as do the specific ORFs disclosed herein. In other words, in the coding region of an ORF, substitution of one codon for another codon that encodes the same amino acid is expressly contemplated.

The nearest neighbor or homology result for the nucleic acids of the present invention, including SEQ ID NO:1-1009, can be obtained by searching a database using an algorithm or a program. Preferably, a BLAST which stands for Basic Local Alignment Search Tool is used to search for local sequence alignments (Altshul, S.F. J Mol. Evol. 36 290-300 (1993) and Altschul S.F. et al. J. Mol. Biol. 21:403-410 (1990)). Alternatively a FASTA version 3 search against Genpept, using Fastxy algorithm.

Species homologs (or orthologs) of the disclosed polynucleotides and proteins are also provided by the present invention. Species homologs may be isolated and identified by making suitable probes or primers from the sequences provided herein and screening a suitable nucleic acid source from the desired species.

The invention also encompasses allelic variants of the disclosed polynucleotides or proteins; that is, naturally-occurring alternative forms of the isolated polynucleotide which also encode proteins which are identical, homologous or related to that encoded by the polynucleotides.

The nucleic acid sequences of the invention are further directed to sequences which encode variants of the described nucleic acids. These amino acid sequence variants may be prepared by methods known in the art by introducing appropriate nucleotide changes into a native or variant polynucleotide. There are two variables in the construction of amino acid sequence variants: the location of the mutation and the nature of the mutation. Nucleic acids encoding the amino acid sequence variants are preferably constructed by mutating the polynucleotide to encode an amino acid sequence that does not occur in nature. These nucleic

acid alterations can be made at sites that differ in the nucleic acids from different species (variable positions) or in highly conserved regions (constant regions). Sites at such locations will typically be modified in series, e.g., by substituting first with conservative choices (e.g., hydrophobic amino acid to a different hydrophobic amino acid) and then with more distant choices (e.g., hydrophobic amino acid to a charged amino acid), and then deletions or insertions may be made at the target site. Amino acid sequence deletions generally range from about 1 to 30 residues, preferably about 1 to 10 residues, and are typically contiguous. Amino acid insertions include amino- and/or carboxyl-terminal fusions ranging in length from one to one hundred or more residues, as well as intrasequence insertions of single or multiple amino acid residues. Intrasequence insertions may range generally from about 1 to 10 amino residues, preferably from 1 to 5 residues. Examples of terminal insertions include the heterologous signal sequences necessary for secretion or for intracellular targeting in different host cells and sequences such as FLAG or poly-histidine sequences useful for purifying the expressed protein.

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In a preferred method, polynucleotides encoding the novel amino acid sequences are changed via site-directed mutagenesis. This method uses oligonucleotide sequences to alter a polynucleotide to encode the desired amino acid variant, as well as sufficient adjacent nucleotides on both sides of the changed amino acid to form a stable duplex on either side of the site of being changed. In general, the techniques of site-directed mutagenesis are well known to those of skill in the art and this technique is exemplified by publications such as, Edelman et al., DNA 2:183 (1983). A versatile and efficient method for producing site-specific changes in a polynucleotide sequence was published by Zoller and Smith, Nucleic Acids Res. 10:6487-6500 (1982). PCR may also be used to create amino acid sequence variants of the novel nucleic acids. When small amounts of template DNA are used as starting material, primer(s) that differs slightly in sequence from the corresponding region in the template DNA can generate the desired amino acid variant. PCR amplification results in a population of product DNA fragments that differ from the polynucleotide template encoding the polypeptide at the position specified by the primer. The product DNA fragments replace the corresponding region in the plasmid and this gives a polynucleotide encoding the desired amino acid variant.

A further technique for generating amino acid variants is the cassette mutagenesis technique described in Wells et al., *Gene* 34:315 (1985); and other mutagenesis techniques well known in the art, such as, for example, the techniques in Sambrook et al., supra, and *Current Protocols in Molecular Biology*, Ausubel et al. Due to the inherent degeneracy of the genetic code, other DNA sequences which encode substantially the same or a functionally equivalent amino acid sequence may be used in the practice of the invention for the cloning and expression

of these novel nucleic acids. Such DNA sequences include those which are capable of hybridizing to the appropriate novel nucleic acid sequence under stringent conditions.

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Polynucleotides encoding preferred polypeptide truncations of the invention can be used to generate polynucleotides encoding chimeric or fusion proteins comprising one or more domains of the invention and heterologous protein sequences.

The polynucleotides of the invention additionally include the complement of any of the polynucleotides recited above. The polynucleotide can be DNA (genomic, cDNA, amplified, or synthetic) or RNA. Methods and algorithms for obtaining such polynucleotides are well known to those of skill in the art and can include, for example, methods for determining hybridization conditions that can routinely isolate polynucleotides of the desired sequence identities.

In accordance with the invention, polynucleotide sequences comprising the mature protein coding sequences corresponding to any one of SEQ ID NO:1-1009, or functional equivalents thereof, may be used to generate recombinant DNA molecules that direct the expression of that nucleic acid, or a functional equivalent thereof, in appropriate host cells. Also included are the cDNA inserts of any of the clones identified herein.

A polynucleotide according to the invention can be joined to any of a variety of other nucleotide sequences by well-established recombinant DNA techniques (see Sambrook J et al. (1989) Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory, NY). Useful nucleotide sequences for joining to polynucleotides include an assortment of vectors, e.g., plasmids, cosmids, lambda phage derivatives, phagemids, and the like, that are well known in the art. Accordingly, the invention also provides a vector including a polynucleotide of the invention and a host cell containing the polynucleotide. In general, the vector contains an origin of replication functional in at least one organism, convenient restriction endonuclease sites, and a selectable marker for the host cell. Vectors according to the invention include expression vectors, replication vectors, probe generation vectors, and sequencing vectors. A host cell according to the invention can be a prokaryotic or eukaryotic cell and can be a unicellular organism or part of a multicellular organism.

The present invention further provides recombinant constructs comprising a nucleic acid having any of the nucleotide sequences of SEQ ID NO:1-1009 or a fragment thereof or any other polynucleotides of the invention. In one embodiment, the recombinant constructs of the present invention comprise a vector, such as a plasmid or viral vector, into which a nucleic acid having any of the nucleotide sequences of SEQ ID NO:1-1009 or a fragment thereof is inserted, in a forward or reverse orientation. In the case of a vector comprising one of the ORFs of the present invention, the vector may further comprise regulatory sequences, including for example, a promoter, operably linked to the ORF. Large numbers of suitable vectors and promoters are

known to those of skill in the art and are commercially available for generating the recombinant constructs of the present invention. The following vectors are provided by way of example. Bacterial: pBs, phagescript, PsiX174, pBluescript SK, pBs KS, pNH8a, pNH16a, pNH18a, pNH46a (Stratagene); pTrc99A, pKK223-3, pKK233-3, pDR540, pRIT5 (Pharmacia). Eukaryotic: pWLneo, pSV2cat, pOG44, PXTI, pSG (Stratagene) pSVK3, pBPV, pMSG, pSVL (Pharmacia).

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The isolated polynucleotide of the invention may be operably linked to an expression control sequence such as the pMT2 or pED expression vectors disclosed in Kaufman et al., Nucleic Acids Res. 19, 4485-4490 (1991), in order to produce the protein recombinantly. Many suitable expression control sequences are known in the art. General methods of expressing recombinant proteins are also known and are exemplified in R. Kaufman, Methods in Enzymology 185, 537-566 (1990). As defined herein "operably linked" means that the isolated polynucleotide of the invention and an expression control sequence are situated within a vector or cell in such a way that the protein is expressed by a host cell which has been transformed (transfected) with the ligated polynucleotide/expression control sequence.

Promoter regions can be selected from any desired gene using CAT (chloramphenicol transferase) vectors or other vectors with selectable markers. Two appropriate vectors are pKK232-8 and pCM7. Particular named bacterial promoters include lacI, lacZ, T3, T7, gpt, lambda PR, and trc. Eukaryotic promoters include CMV immediate early, HSV thymidine kinase, early and late SV40, LTRs from retrovirus, and mouse metallothionein-I. Selection of the appropriate vector and promoter is well within the level of ordinary skill in the art. Generally, recombinant expression vectors will include origins of replication and selectable markers permitting transformation of the host cell, e.g., the ampicillin resistance gene of E. coli and S. cerevisiae TRP1 gene, and a promoter derived from a highly-expressed gene to direct transcription of a downstream structural sequence. Such promoters can be derived from operons encoding glycolytic enzymes such as 3-phosphoglycerate kinase (PGK), a-factor, acid phosphatase, or heat shock proteins, among others. The heterologous structural sequence is assembled in appropriate phase with translation initiation and termination sequences, and preferably, a leader sequence capable of directing secretion of translated protein into the periplasmic space or extracellular medium. Optionally, the heterologous sequence can encode a fusion protein including an amino terminal identification peptide imparting desired characteristics, e.g., stabilization or simplified purification of expressed recombinant product. Useful expression vectors for bacterial use are constructed by inserting a structural DNA sequence encoding a desired protein together with suitable translation initiation and termination signals in operable reading phase with a functional promoter. The vector will comprise one or

more phenotypic selectable markers and an origin of replication to ensure maintenance of the vector and to, if desirable, provide amplification within the host. Suitable prokaryotic hosts for transformation include *E. coli*, *Bacillus subtilis*, *Salmonella typhimurium* and various species within the genera *Pseudomonas*, *Streptomyces*, and *Staphylococcus*, although others may also be employed as a matter of choice.

As a representative but non-limiting example, useful expression vectors for bacterial use can comprise a selectable marker and bacterial origin of replication derived from commercially available plasmids comprising genetic elements of the well known cloning vector pBR322 (ATCC 37017). Such commercial vectors include, for example, pKK223-3 (Pharmacia Fine Chemicals, Uppsala, Sweden) and GEM 1 (Promega Biotech, Madison, WI, USA). These pBR322 "backbone" sections are combined with an appropriate promoter and the structural sequence to be expressed. Following transformation of a suitable host strain and growth of the host strain to an appropriate cell density, the selected promoter is induced or derepressed by appropriate means (e.g., temperature shift or chemical induction) and cells are cultured for an additional period. Cells are typically harvested by centrifugation, disrupted by physical or chemical means, and the resulting crude extract retained for further purification.

Polynucleotides of the invention can also be used to induce immune responses. For example, as described in Fan et al., *Nat. Biotech.* 17:870-872 (1999), incorporated herein by reference, nucleic acid sequences encoding a polypeptide may be used to generate antibodies against the encoded polypeptide following topical administration of naked plasmid DNA or following injection, and preferably intramuscular injection of the DNA. The nucleic acid sequences are preferably inserted in a recombinant expression vector and may be in the form of naked DNA.

#### **4.3 ANTISENSE**

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Another aspect of the invention pertains to isolated antisense nucleic acid molecules that are hybridizable to or complementary to the nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO:1-1009, or fragments, analogs or derivatives thereof. An "antisense" nucleic acid comprises a nucleotide sequence that is complementary to a "sense" nucleic acid encoding a protein, e.g., complementary to the coding strand of a double-stranded cDNA molecule or complementary to an mRNA sequence. In specific aspects, antisense nucleic acid molecules are provided that comprise a sequence complementary to at least about 10, 25, 50, 100, 250 or 500 nucleotides or an entire coding strand, or to only a portion thereof. Nucleic acid molecules encoding fragments, homologs, derivatives and analogs of a protein of any of SEQ ID

NO:1010-2018 or antisense nucleic acids complementary to a nucleic acid sequence of SEQ ID NO:1-1009 are additionally provided.

In one embodiment, an antisense nucleic acid molecule is antisense to a "coding region" of the coding strand of a nucleotide sequence of the invention. The term "coding region" refers to the region of the nucleotide sequence comprising codons which are translated into amino acid residues. In another embodiment, the antisense nucleic acid molecule is antisense to a "noncoding region" of the coding strand of a nucleotide sequence of the invention. The term "noncoding region" refers to 5' and 3' sequences which flank the coding region that are not translated into amino acids (*i.e.*, also referred to as 5' and 3' untranslated regions).

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Given the coding strand sequences encoding a nucleic acid disclosed herein (e.g., SEQ ID NO:1-1009), antisense nucleic acids of the invention can be designed according to the rules of Watson and Crick or Hoogsteen base pairing. The antisense nucleic acid molecule can be complementary to the entire coding region of a mRNA, but more preferably is an oligonucleotide that is antisense to only a portion of the coding or noncoding region of a mRNA. For example, the antisense oligonucleotide can be complementary to the region surrounding the translation start site of a mRNA. An antisense oligonucleotide can be, for example, about 5, 10, 15, 20, 25, 30, 35, 40, 45 or 50 nucleotides in length. An antisense nucleic acid of the invention can be constructed using chemical synthesis or enzymatic ligation reactions using procedures known in the art. For example, an antisense nucleic acid (e.g., an antisense oligonucleotide) can be chemically synthesized using naturally occurring nucleotides or variously modified nucleotides designed to increase the biological stability of the molecules or to increase the physical stability of the duplex formed between the antisense and sense nucleic acids, e.g., phosphorothioate derivatives and acridine substituted nucleotides can be used.

Examples of modified nucleotides that can be used to generate the antisense nucleic acid include: 5-fluorouracil, 5-bromouracil, 5-chlorouracil, 5-iodouracil, hypoxanthine, xanthine, 4-acetylcytosine, 5-(carboxyhydroxylmethyl) uracil, 5-carboxymethylaminomethyl-2-thiouridine, 5-carboxymethylaminomethyluracil, dihydrouracil, beta-D-galactosylqueosine, inosine, N6-isopentenyladenine, 1-methylguanine, 1-methylinosine, 2,2-dimethylguanine, 2-methyladenine, 2-methylguanine, 3-methylcytosine, 5-methylcytosine, N6-adenine, 7-methylguanine, 5-methylaminomethyluracil, 5-methoxyaminomethyl-2-thiouracil, beta-D-mannosylqueosine, 5'-methoxycarboxymethyluracil, 5-methoxyuracil, 2-methylthio-N6-isopentenyladenine, uracil-5-oxyacetic acid (v), wybutoxosine, pseudouracil, queosine, 2-thiocytosine, 5-methyl-2-thiouracil, 2-thiouracil, 4-thiouracil, 5-methyluracil, uracil-5-oxyacetic acid methylester, uracil-5-oxyacetic acid (v), 5-methyl-2-thiouracil, 3-(3-amino-3-N-2-carboxypropyl) uracil, (acp3)w, and 2,6-diaminopurine. Alternatively, the

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antisense nucleic acid can be produced biologically using an expression vector into which a nucleic acid has been subcloned in an antisense orientation (i.e., RNA transcribed from the inserted nucleic acid will be of an antisense orientation to a target nucleic acid of interest, described further in the following subsection).

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The antisense nucleic acid molecules of the invention are typically administered to a subject or generated in situ such that they hybridize with or bind to cellular mRNA and/or genomic DNA encoding a protein according to the invention to thereby inhibit expression of the protein, e.g., by inhibiting transcription and/or translation. The hybridization can be by conventional nucleotide complementarity to form a stable duplex, or, for example, in the case of an antisense nucleic acid molecule that binds to DNA duplexes, through specific interactions in the major groove of the double helix. An example of a route of administration of antisense nucleic acid molecules of the invention includes direct injection at a tissue site. Alternatively, antisense nucleic acid molecules can be modified to target selected cells and then administered systemically. For example, for systemic administration, antisense molecules can be modified such that they specifically bind to receptors or antigens expressed on a selected cell surface, e.g., by linking the antisense nucleic acid molecules to peptides or antibodies that bind to cell surface receptors or antigens. The antisense nucleic acid molecules can also be delivered to cells using the vectors described herein. To achieve sufficient intracellular concentrations of antisense molecules, vector constructs in which the antisense nucleic acid molecule is placed under the control of a strong pol II or pol III promoter are preferred.

In yet another embodiment, the antisense nucleic acid molecule of the invention is an α-anomeric nucleic acid molecule. An α-anomeric nucleic acid molecule forms specific double-stranded hybrids with complementary RNA in which, contrary to the usual β-units, the strands run parallel to each other (Gaultier *et al.* (1987) *Nucleic Acids Res* 15: 6625-6641). The antisense nucleic acid molecule can also comprise a 2'-o-methylribonucleotide (Inoue *et al.* (1987) *Nucleic Acids Res* 15: 6131-6148) or a chimeric RNA -DNA analogue (Inoue *et al.* (1987) *FEBS Lett* 215: 327-330).

#### 4.4 RIBOZYMES AND PNA MOIETIES

In still another embodiment, an antisense nucleic acid of the invention is a ribozyme. Ribozymes are catalytic RNA molecules with ribonuclease activity that are capable of cleaving a single-stranded nucleic acid, such as a mRNA, to which they have a complementary region. Thus, ribozymes (e.g., hammerhead ribozymes (described in Haselhoff and Gerlach (1988) Nature 334:585-591)) can be used to catalytically cleave a mRNA transcripts to thereby inhibit translation of a mRNA. A ribozyme having specificity for a nucleic acid of the invention can be

designed based upon the nucleotide sequence of a DNA disclosed herein (i.e., SEQ ID NO:1-1009). For example, a derivative of a Tetrahymena L-19 IVS RNA can be constructed in which the nucleotide sequence of the active site is complementary to the nucleotide sequence to be cleaved in a SECX-encoding mRNA. See, e.g., Cech et al. U.S. Pat. No. 4,987,071; and Cech et al. U.S. Pat. No. 5,116,742. Alternatively, SECX mRNA can be used to select a catalytic RNA having a specific ribonuclease activity from a pool of RNA molecules. See, e.g., Bartel et al., (1993) Science 261:1411-1418.

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Alternatively, gene expression can be inhibited by targeting nucleotide sequences complementary to the regulatory region (e.g., promoter and/or enhancers) to form triple helical structures that prevent transcription of the gene in target cells. See generally, Helene. (1991) Anticancer Drug Des. 6: 569-84; Helene. et al. (1992) Ann. N.Y. Acad. Sci. 660:27-36; and Maher (1992) Bioassays 14: 807-15.

In various embodiments, the nucleic acids of the invention can be modified at the base moiety, sugar moiety or phosphate backbone to improve, e.g., the stability, hybridization, or solubility of the molecule. For example, the deoxyribose phosphate backbone of the nucleic acids can be modified to generate peptide nucleic acids (see Hyrup et al. (1996) Bioorg Med Chem 4: 5-23). As used herein, the terms "peptide nucleic acids" or "PNAs" refer to nucleic acid mimics, e.g., DNA mimics, in which the deoxyribose phosphate backbone is replaced by a pseudopeptide backbone and only the four natural nucleobases are retained. The neutral backbone of PNAs has been shown to allow for specific hybridization to DNA and RNA under conditions of low ionic strength. The synthesis of PNA oligomers can be performed using standard solid phase peptide synthesis protocols as described in Hyrup et al. (1996) above; Perry-O'Keefe et al. (1996) PNAS 93: 14670-675.

PNAs of the invention can be used in therapeutic and diagnostic applications. For example, PNAs can be used as antisense or antigene agents for sequence-specific modulation of gene expression by, e.g., inducing transcription or translation arrest or inhibiting replication. PNAs of the invention can also be used, e.g., in the analysis of single base pair mutations in a gene by, e.g., PNA directed PCR clamping; as artificial restriction enzymes when used in combination with other enzymes, e.g., S1 nucleases (Hyrup B. (1996) above); or as probes or primers for DNA sequence and hybridization (Hyrup et al. (1996), above; Perry-O'Keefe (1996), above).

In another embodiment, PNAs of the invention can be modified, e.g., to enhance their stability or cellular uptake, by attaching lipophilic or other helper groups to PNA, by the formation of PNA-DNA chimeras, or by the use of liposomes or other techniques of drug delivery known in the art. For example, PNA-DNA chimeras can be generated that may

combine the advantageous properties of PNA and DNA. Such chimeras allow DNA recognition enzymes, e.g., RNase H and DNA polymerases, to interact with the DNA portion while the PNA portion would provide high binding affinity and specificity. PNA-DNA chimeras can be linked using linkers of appropriate lengths selected in terms of base stacking, number of bonds between the nucleobases, and orientation (Hyrup (1996) above). The synthesis of PNA-DNA chimeras can be performed as described in Hyrup (1996) above and Finn et al. (1996) Nucl Acids Res 24: 3357-63. For example, a DNA chain can be synthesized on a solid support using standard phosphoramidite coupling chemistry, and modified nucleoside analogs, e.g., 5'-(4-methoxytrityl)amino-5'-deoxy-thymidine phosphoramidite, can be used between the PNA and the 5' end of DNA (Mag et al. (1989) Nucl Acid Res 17: 5973-88). PNA monomers are then coupled in a stepwise manner to produce a chimeric molecule with a 5' PNA segment and a 3' DNA segment (Finn et al. (1996) above). Alternatively, chimeric molecules can be synthesized with a 5' DNA segment and a 3' PNA segment. See, Petersen et al. (1975) Bioorg Med Chem Lett 5: 1119-11124.

In other embodiments, the oligonucleotide may include other appended groups such as peptides (e.g., for targeting host cell receptors in vivo), or agents facilitating transport across the cell membrane (see, e.g., Letsinger et al., 1989, Proc. Natl. Acad. Sci. U.S.A. 86:6553-6556; Lemaitre et al., 1987, Proc. Natl. Acad. Sci. 84:648-652; PCT Publication No. W088/09810) or the blood-brain barrier (see, e.g., PCT Publication No. W089/10134). In addition, oligonucleotides can be modified with hybridization triggered cleavage agents (See, e.g., Krol et al., 1988, BioTechniques 6:958-976) or intercalating agents. (See, e.g., Zon, 1988, Pharm. Res. 5: 539-549). To this end, the oligonucleotide may be conjugated to another molecule, e.g., a peptide, a hybridization triggered cross-linking agent, a transport agent, a hybridization-triggered cleavage agent, etc.

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#### **4.5 HOSTS**

The present invention further provides host cells genetically engineered to contain the polynucleotides of the invention. For example, such host cells may contain nucleic acids of the invention introduced into the host cell using known transformation, transfection or infection methods. The present invention still further provides host cells genetically engineered to express the polynucleotides of the invention, wherein such polynucleotides are in operative association with a regulatory sequence heterologous to the host cell which drives expression of the polynucleotides in the cell.

Knowledge of nucleic acid sequences allows for modification of cells to permit, or increase, expression of endogenous polypeptide. Cells can be modified (e.g., by homologous

recombination) to provide increased polypeptide expression by replacing, in whole or in part, the naturally occurring promoter with all or part of a heterologous promoter so that the cells express the polypeptide at higher levels. The heterologous promoter is inserted in such a manner that it is operatively linked to the encoding sequences. See, for example, PCT International Publication No. WO94/12650, PCT International Publication No. WO92/20808, and PCT International Publication No. WO91/09955. It is also contemplated that, in addition to heterologous promoter DNA, amplifiable marker DNA (e.g., ada, dhfr, and the multifunctional CAD gene which encodes carbamyl phosphate synthase, aspartate transcarbamylase, and dihydroorotase) and/or intron DNA may be inserted along with the heterologous promoter DNA. If linked to the coding sequence, amplification of the marker DNA by standard selection methods results in coamplification of the desired protein coding sequences in the cells.

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The host cell can be a higher eukaryotic host cell, such as a mammalian cell, a lower eukaryotic host cell, such as a yeast cell, or the host cell can be a prokaryotic cell, such as a bacterial cell. Introduction of the recombinant construct into the host cell can be effected by calcium phosphate transfection, DEAE, dextran mediated transfection, or electroporation (Davis, L. et al., *Basic Methods in Molecular Biology* (1986)). The host cells containing one of the polynucleotides of the invention, can be used in conventional manners to produce the gene product encoded by the isolated fragment (in the case of an ORF) or can be used to produce a heterologous protein under the control of the EMF.

Any host/vector system can be used to express one or more of the ORFs of the present invention. These include, but are not limited to, eukaryotic hosts such as HeLa cells, Cv-1 cell, COS cells, 293 cells, and Sf9 cells, as well as prokaryotic host such as *E. coli* and *B. subtilis*. The most preferred cells are those which do not normally express the particular polypeptide or protein or which expresses the polypeptide or protein at low natural level. Mature proteins can be expressed in mammalian cells, yeast, bacteria, or other cells under the control of appropriate promoters. Cell-free translation systems can also be employed to produce such proteins using RNAs derived from the DNA constructs of the present invention. Appropriate cloning and expression vectors for use with prokaryotic and eukaryotic hosts are described by Sambrook, et al., in Molecular Cloning: A Laboratory Manual, Second Edition, Cold Spring Harbor, New York (1989), the disclosure of which is hereby incorporated by reference.

Various mammalian cell culture systems can also be employed to express recombinant protein. Examples of mammalian expression systems include the COS-7 lines of monkey kidney fibroblasts, described by Gluzman, Cell 23:175 (1981). Other cell lines capable of expressing a compatible vector are, for example, the C127, monkey COS cells, Chinese Hamster Ovary (CHO) cells, human kidney 293 cells, human epidermal A431 cells, human Colo205 cells, 3T3

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cells, CV-1 cells, other transformed primate cell lines, normal diploid cells, cell strains derived from *in vitro* culture of primary tissue, primary explants, HeLa cells, mouse L cells, BHK, HL-60, U937, HaK or Jurkat cells. Mammalian expression vectors will comprise an origin of replication, a suitable promoter and also any necessary ribosome binding sites, polyadenylation site, splice donor and acceptor sites, transcriptional termination sequences, and 5' flanking nontranscribed sequences. DNA sequences derived from the SV40 viral genome, for example, SV40 origin, early promoter, enhancer, splice, and polyadenylation sites may be used to provide the required nontranscribed genetic elements. Recombinant polypeptides and proteins produced in bacterial culture are usually isolated by initial extraction from cell pellets, followed by one or more salting-out, aqueous ion exchange or size exclusion chromatography steps. Protein refolding steps can be used, as necessary, in completing configuration of the mature protein. Finally, high performance liquid chromatography (HPLC) can be employed for final purification steps. Microbial cells employed in expression of proteins can be disrupted by any convenient method, including freeze-thaw cycling, sonication, mechanical disruption, or use of cell lysing agents.

Alternatively, it may be possible to produce the protein in lower eukaryotes such as yeast or insects or in prokaryotes such as bacteria. Potentially suitable yeast strains include Saccharomyces cerevisiae, Schizosaccharomyces pombe, Kluyveromyces strains, Candida, or any yeast strain capable of expressing heterologous proteins. Potentially suitable bacterial strains include Escherichia coli, Bacillus subtilis, Salmonella typhimurium, or any bacterial strain capable of expressing heterologous proteins. If the protein is made in yeast or bacteria, it may be necessary to modify the protein produced therein, for example by phosphorylation or glycosylation of the appropriate sites, in order to obtain the functional protein. Such covalent attachments may be accomplished using known chemical or enzymatic methods.

In another embodiment of the present invention, cells and tissues may be engineered to express an endogenous gene comprising the polynucleotides of the invention under the control of inducible regulatory elements, in which case the regulatory sequences of the endogenous gene may be replaced by homologous recombination. As described herein, gene targeting can be used to replace a gene's existing regulatory region with a regulatory sequence isolated from a different gene or a novel regulatory sequence synthesized by genetic engineering methods. Such regulatory sequences may be comprised of promoters, enhancers, scaffold-attachment regions, negative regulatory elements, transcriptional initiation sites, regulatory protein binding sites or combinations of said sequences. Alternatively, sequences which affect the structure or stability of the RNA or protein produced may be replaced, removed, added, or otherwise modified by targeting. These sequence include polyadenylation signals, mRNA stability elements, splice

sites, leader sequences for enhancing or modifying transport or secretion properties of the protein, or other sequences which alter or improve the function or stability of protein or RNA molecules.

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The targeting event may be a simple insertion of the regulatory sequence, placing the gene under the control of the new regulatory sequence, e.g., inserting a new promoter or enhancer or both upstream of a gene. Alternatively, the targeting event may be a simple deletion of a regulatory element, such as the deletion of a tissue-specific negative regulatory element. Alternatively, the targeting event may replace an existing element; for example, a tissue-specific enhancer can be replaced by an enhancer that has broader or different cell-type specificity than the naturally occurring elements. Here, the naturally occurring sequences are deleted and new sequences are added. In all cases, the identification of the targeting event may be facilitated by the use of one or more selectable marker genes that are contiguous with the targeting DNA. allowing for the selection of cells in which the exogenous DNA has integrated into the host cell genome. The identification of the targeting event may also be facilitated by the use of one or more marker genes exhibiting the property of negative selection, such that the negatively selectable marker is linked to the exogenous DNA, but configured such that the negatively selectable marker flanks the targeting sequence, and such that a correct homologous recombination event with sequences in the host cell genome does not result in the stable integration of the negatively selectable marker. Markers useful for this purpose include the Herpes Simplex Virus thymidine kinase (TK) gene or the bacterial xanthine-guanine phosphoribosyl-transferase (gpt) gene.

The gene targeting or gene activation techniques which can be used in accordance with this aspect of the invention are more particularly described in U.S. Patent No. 5,272,071 to Chappel; U.S. Patent No. 5,578,461 to Sherwin et al.; International Application No. PCT/US92/09627 (WO93/09222) by Selden et al.; and International Application No. PCT/US90/06436 (WO91/06667) by Skoultchi et al., each of which is incorporated by reference herein in its entirety.

#### 4.6 POLYPEPTIDES OF THE INVENTION

The isolated polypeptides of the invention include, but are not limited to, a polypeptide comprising: the amino acid sequences set forth as any one of SEQ ID NO:1010-2018 or an amino acid sequence encoded by any one of the nucleotide sequences SEQ ID NO:1-1009 or the corresponding full length or mature protein. Polypeptides of the invention also include polypeptides preferably with biological or immunological activity that are encoded by: (a) a polynucleotide having any one of the nucleotide sequences set forth in SEQ ID NO:1-1009 or (b)

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polynucleotides encoding any one of the amino acid sequences set forth as SEQ ID NO:1010-2018 or (c) polynucleotides that hybridize to the complement of the polynucleotides of either (a) or (b) under stringent hybridization conditions. The invention also provides biologically active or immunologically active variants of any of the amino acid sequences set forth as SEQ ID NO:1010-2018 or the corresponding full length or mature protein; and "substantial equivalents" thereof (e.g., with at least about 65%, at least about 70%, at least about 75%, at least about 80%, at least about 85%, 86%, 87%, 88%, 89%, at least about 90%, 91%, 92%, 93%, 94%, typically at least about 95%, 96%, 97%, more typically at least about 98%, or most typically at least about 99% amino acid identity) that retain biological activity. Polypeptides encoded by allelic variants may have a similar, increased, or decreased activity compared to polypeptides comprising SEQ ID NO:1010-2018.

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Fragments of the proteins of the present invention which are capable of exhibiting biological activity are also encompassed by the present invention. Fragments of the protein may be in linear form or they may be cyclized using known methods, for example, as described in H. U. Saragovi, et al., Bio/Technology 10, 773-778 (1992) and in R. S. McDowell, et al., J. Amer. Chem. Soc. 114, 9245-9253 (1992), both of which are incorporated herein by reference. Such fragments may be fused to carrier molecules such as immunoglobulins for many purposes, including increasing the valency of protein binding sites.

The present invention also provides both full-length and mature forms (for example, without a signal sequence or precursor sequence) of the disclosed proteins. The protein coding sequence is identified in the sequence listing by translation of the disclosed nucleotide sequences. The mature form of such protein may be obtained by expression of a full-length polynucleotide in a suitable mammalian cell or other host cell. The sequence of the mature form of the protein is also determinable from the amino acid sequence of the full-length form. Where proteins of the present invention are membrane bound, soluble forms of the proteins are also provided. In such forms, part or all of the regions causing the proteins to be membrane bound are deleted so that the proteins are fully secreted from the cell in which they are expressed.

Protein compositions of the present invention may further comprise an acceptable carrier, such as a hydrophilic, e.g., pharmaceutically acceptable, carrier.

The present invention further provides isolated polypeptides encoded by the nucleic acid fragments of the present invention or by degenerate variants of the nucleic acid fragments of the present invention. By "degenerate variant" is intended nucleotide fragments which differ from a nucleic acid fragment of the present invention (e.g., an ORF) by nucleotide sequence but, due to the degeneracy of the genetic code, encode an identical polypeptide sequence. Preferred nucleic acid fragments of the present invention are the ORFs that encode proteins.

A variety of methodologies known in the art can be utilized to obtain any one of the isolated polypeptides or proteins of the present invention. At the simplest level, the amino acid sequence can be synthesized using commercially available peptide synthesizers. The synthetically-constructed protein sequences, by virtue of sharing primary, secondary or tertiary structural and/or conformational characteristics with proteins may possess biological properties in common therewith, including protein activity. This technique is particularly useful in producing small peptides and fragments of larger polypeptides. Fragments are useful, for example, in generating antibodies against the native polypeptide. Thus, they may be employed as biologically active or immunological substitutes for natural, purified proteins in screening of therapeutic compounds and in immunological processes for the development of antibodies.

The polypeptides and proteins of the present invention can alternatively be purified from cells which have been altered to express the desired polypeptide or protein. As used herein, a cell is said to be altered to express a desired polypeptide or protein when the cell, through genetic manipulation, is made to produce a polypeptide or protein which it normally does not produce or which the cell normally produces at a lower level. One skilled in the art can readily adapt procedures for introducing and expressing either recombinant or synthetic sequences into eukaryotic or prokaryotic cells in order to generate a cell which produces one of the polypeptides or proteins of the present invention.

The invention also relates to methods for producing a polypeptide comprising growing a culture of host cells of the invention in a suitable culture medium, and purifying the protein from the cells or the culture in which the cells are grown. For example, the methods of the invention include a process for producing a polypeptide in which a host cell containing a suitable expression vector that includes a polynucleotide of the invention is cultured under conditions that allow expression of the encoded polypeptide. The polypeptide can be recovered from the culture, conveniently from the culture medium, or from a lysate prepared from the host cells and further purified. Preferred embodiments include those in which the protein produced by such process is a full length or mature form of the protein.

In an alternative method, the polypeptide or protein is purified from bacterial cells which naturally produce the polypeptide or protein. One skilled in the art can readily follow known methods for isolating polypeptides and proteins in order to obtain one of the isolated polypeptides or proteins of the present invention. These include, but are not limited to, immunochromatography, HPLC, size-exclusion chromatography, ion-exchange chromatography, and immuno-affinity chromatography. See, e.g., Scopes, Protein Purification: Principles and Practice, Springer-Verlag (1994); Sambrook, et al., in Molecular Cloning: A Laboratory Manual; Ausubel et al., Current Protocols in Molecular Biology. Polypeptide fragments that

retain biological/immunological activity include fragments comprising greater than about 100 amino acids, or greater than about 200 amino acids, and fragments that encode specific protein domains.

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The purified polypeptides can be used in *in vitro* binding assays which are well known in the art to identify molecules which bind to the polypeptides. These molecules include but are not limited to, for *e.g.*, small molecules, molecules from combinatorial libraries, antibodies or other proteins. The molecules identified in the binding assay are then tested for antagonist or agonist activity in *in vivo* tissue culture or animal models that are well known in the art. In brief, the molecules are titrated into a plurality of cell cultures or animals and then tested for either cell/animal death or prolonged survival of the animal/cells.

In addition, the peptides of the invention or molecules capable of binding to the peptides may be complexed with toxins, e.g., ricin or cholera, or with other compounds that are toxic to cells. The toxin-binding molecule complex is then targeted to a tumor or other cell by the specificity of the binding molecule for SEQ ID NO:1010-2018.

The protein of the invention may also be expressed as a product of transgenic animals, e.g., as a component of the milk of transgenic cows, goats, pigs, or sheep which are characterized by somatic or germ cells containing a nucleotide sequence encoding the protein.

The proteins provided herein also include proteins characterized by amino acid sequences similar to those of purified proteins but into which modification are naturally provided or deliberately engineered. For example, modifications, in the peptide or DNA sequence, can be made by those skilled in the art using known techniques. Modifications of interest in the protein sequences may include the alteration, substitution, replacement, insertion or deletion of a selected amino acid residue in the coding sequence. For example, one or more of the cysteine residues may be deleted or replaced with another amino acid to alter the conformation of the molecule. Techniques for such alteration, substitution, replacement, insertion or deletion are well known to those skilled in the art (see, e.g., U.S. Pat. No. 4,518,584). Preferably, such alteration, substitution, replacement, insertion or deletion retains the desired activity of the protein. Regions of the protein that are important for the protein function can be determined by various methods known in the art including the alanine-scanning method which involved systematic substitution of single or strings of amino acids with alanine, followed by testing the resulting alanine-containing variant for biological activity. This type of analysis determines the importance of the substituted amino acid(s) in biological activity. Regions of the protein that are important for protein function may be determined by the eMATRIX program.

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Other fragments and derivatives of the sequences of proteins which would be expected to retain protein activity in whole or in part and are useful for screening or other immunological

methodologies may also be easily made by those skilled in the art given the disclosures herein. Such modifications are encompassed by the present invention.

The protein may also be produced by operably linking the isolated polynucleotide of the invention to suitable control sequences in one or more insect expression vectors, and employing an insect expression system. Materials and methods for baculovirus/insect cell expression systems are commercially available in kit form from, e.g., Invitrogen, San Diego, Calif., U.S.A. (the MaxBat<sup>TM</sup> kit), and such methods are well known in the art, as described in Summers and Smith, Texas Agricultural Experiment Station Bulletin No. 1555 (1987), incorporated herein by reference. As used herein, an insect cell capable of expressing a polynucleotide of the present invention is "transformed."

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The protein of the invention may be prepared by culturing transformed host cells under culture conditions suitable to express the recombinant protein. The resulting expressed protein may then be purified from such culture (*i.e.*, from culture medium or cell extracts) using known purification processes, such as gel filtration and ion exchange chromatography. The purification of the protein may also include an affinity column containing agents which will bind to the protein; one or more column steps over such affinity resins as concanavalin A-agarose, heparin-toyopearl<sup>TM</sup> or Cibacrom blue 3GA Sepharose<sup>TM</sup>; one or more steps involving hydrophobic interaction chromatography using such resins as phenyl ether, butyl ether, or propyl ether; or immunoaffinity chromatography.

Alternatively, the protein of the invention may also be expressed in a form which will facilitate purification. For example, it may be expressed as a fusion protein, such as those of maltose binding protein (MBP), glutathione-S-transferase (GST) or thioredoxin (TRX), or as a His tag. Kits for expression and purification of such fusion proteins are commercially available from New England BioLab (Beverly, Mass.), Pharmacia (Piscataway, N.J.) and Invitrogen, respectively. The protein can also be tagged with an epitope and subsequently purified by using a specific antibody directed to such epitope. One such epitope ("FLAG®") is commercially available from Kodak (New Haven, Conn.).

Finally, one or more reverse-phase high performance liquid chromatography (RP-HPLC) steps employing hydrophobic RP-HPLC media, e.g., silica gel having pendant methyl or other aliphatic groups, can be employed to further purify the protein. Some or all of the foregoing purification steps, in various combinations, can also be employed to provide a substantially homogeneous isolated recombinant protein. The protein thus purified is substantially free of other mammalian proteins and is defined in accordance with the present invention as an "isolated protein."

The polypeptides of the invention include analogs (variants). This embraces fragments, as well as peptides in which one or more amino acids has been deleted, inserted, or substituted. Also, analogs of the polypeptides of the invention embrace fusions of the polypeptides or modifications of the polypeptides of the invention, wherein the polypeptide or analog is fused to another moiety or moieties, *e.g.*, targeting moiety or another therapeutic agent. Such analogs may exhibit improved properties such as activity and/or stability. Examples of moieties which may be fused to the polypeptide or an analog include, for example, targeting moieties which provide for the delivery of polypeptide to pancreatic cells, *e.g.*, antibodies to pancreatic cells, antibodies to immune cells such as T-cells, monocytes, dendritic cells, granulocytes, etc., as well as receptor and ligands expressed on pancreatic or immune cells. Other moieties which may be fused to the polypeptide include therapeutic agents which are used for treatment, for example, immunosuppressive drugs such as cyclosporin, SK506, azathioprine, CD3 antibodies and steroids. Also, polypeptides may be fused to immune modulators, and other cytokines such as alpha or beta interferon.

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# 4.6.1 DETERMINING POLYPEPTIDE AND POLYNUCLEOTIDE IDENTITY AND SIMILARITY

Preferred identity and/or similarity are designed to give the largest match between the sequences tested. Methods to determine identity and similarity are codified in computer 20 programs including, but are not limited to, the GCG program package, including GAP (Devereux, J., et al., Nucleic Acids Research 12(1):387 (1984); Genetics Computer Group, University of Wisconsin, Madison, WI), BLASTP, BLASTN, BLASTX, FASTA (Altschul, S.F. et al., J. Molec. Biol. 215:403-410 (1990), PSI-BLAST (Altschul S.F. et al., Nucleic Acids Res. vol. 25, pp. 3389-3402, herein incorporated by reference), eMatrix software (Wu et al., J. Comp. 25 Biol., Vol. 6, pp. 219-235 (1999), herein incorporated by reference), eMotif software (Nevill-Manning et al, ISMB-97, Vol. 4, pp. 202-209, herein incorporated by reference), pFam software (Sonnhammer et al., Nucleic Acids Res., Vol. 26(1), pp. 320-322 (1998), herein incorporated by reference) and the Kyte-Doolittle hydrophobocity prediction algorithm (J. Mol Biol, 157, pp. 105-31 (1982), incorporated herein by reference). The BLAST programs are publicly available 30 from the National Center for Biotechnology Information (NCBI) and other sources (BLAST Manual, Altschul, S., et al. NCB NLM NIH Bethesda, MD 20894; Altschul, S., et al., J. Mol. Biol. 215:403-410 (1990).

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#### 4.7 CHIMERIC AND FUSION PROTEINS

The invention also provides chimeric or fusion proteins. As used herein, a "chimeric protein" or "fusion protein" comprises a polypeptide of the invention operatively linked to

another polypeptide. Within a fusion protein the polypeptide according to the invention can correspond to all or a portion of a protein according to the invention. In one embodiment, a fusion protein comprises at least one biologically active portion of a protein according to the invention. In another embodiment, a fusion protein comprises at least two biologically active portions of a protein according to the invention. Within the fusion protein, the term "operatively linked" is intended to indicate that the polypeptide according to the invention and the other polypeptide are fused in-frame to each other. The polypeptide can be fused to the N-terminus or C-terminus.

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For example, in one embodiment a fusion protein comprises a polypeptide according to the invention operably linked to the extracellular domain of a second protein.

In another embodiment, the fusion protein is a GST-fusion protein in which the polypeptide sequences of the invention are fused to the C-terminus of the GST (i.e., glutathione S-transferase) sequences.

In another embodiment, the fusion protein is an immunoglobulin fusion protein in which the polypeptide sequences according to the invention comprises one or more domains are fused to sequences derived from a member of the immunoglobulin protein family. The immunoglobulin fusion proteins of the invention can be incorporated into pharmaceutical compositions and administered to a subject to inhibit an interaction between a ligand and a protein of the invention on the surface of a cell, to thereby suppress signal transduction *in vivo*. The immunoglobulin fusion proteins can be used to affect the bioavailability of a cognate ligand. Inhibition of the ligand/protein interaction may be useful therapeutically for both the treatment of proliferative and differentiative disorders, *e,g.*, cancer as well as modulating (*e.g.*, promoting or inhibiting) cell survival. Moreover, the immunoglobulin fusion proteins of the invention can be used as immunogens to produce antibodies in a subject, to purify ligands, and in screening assays to identify molecules that inhibit the interaction of a polypeptide of the invention with a ligand.

A chimeric or fusion protein of the invention can be produced by standard recombinant DNA techniques. For example, DNA fragments coding for the different polypeptide sequences are ligated together in-frame in accordance with conventional techniques, e.g., by employing blunt-ended or stagger-ended termini for ligation, restriction enzyme digestion to provide for appropriate termini, filling-in of cohesive ends as appropriate, alkaline phosphatase treatment to avoid undesirable joining, and enzymatic ligation. In another embodiment, the fusion gene can be synthesized by conventional techniques including automated DNA synthesizers.

Alternatively, PCR amplification of gene fragments can be carried out using anchor primers that give rise to complementary overhangs between two consecutive gene fragments that can subsequently be annealed and reamplified to generate a chimeric gene sequence (see, for

example, Ausubel et al. (eds.) CURRENT PROTOCOLS IN MOLECULAR BIOLOGY, John Wiley & Sons, 1992). Moreover, many expression vectors are commercially available that already encode a fusion moiety (e.g., a GST polypeptide). A nucleic acid encoding a polypeptide of the invention can be cloned into such an expression vector such that the fusion moiety is linked in-frame to the protein of the invention.

#### 4.8 GENE THERAPY

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Mutations in the polynucleotides of the invention gene may result in loss of normal function of the encoded protein. The invention thus provides gene therapy to restore normal activity of the polypeptides of the invention; or to treat disease states involving polypeptides of the invention. Delivery of a functional gene encoding polypeptides of the invention to appropriate cells is effected ex vivo, in situ, or in vivo by use of vectors, and more particularly viral vectors (e.g., adenovirus, adeno-associated virus, or a retrovirus), or ex vivo by use of physical DNA transfer methods (e.g., liposomes or chemical treatments). See, for example, Anderson, Nature, supplement to vol. 392, no. 6679, pp.25-20 (1998). For additional reviews of gene therapy technology see Friedmann, Science, 244: 1275-1281 (1989); Verma, Scientific American: 68-84 (1990); and Miller, Nature, 357: 455-460 (1992). Introduction of any one of the nucleotides of the present invention or a gene encoding the polypeptides of the present invention can also be accomplished with extrachromosomal substrates (transient expression) or artificial chromosomes (stable expression). Cells may also be cultured ex vivo in the presence of proteins of the present invention in order to proliferate or to produce a desired effect on or activity in such cells. Treated cells can then be introduced in vivo for therapeutic purposes. Alternatively, it is contemplated that in other human disease states, preventing the expression of or inhibiting the activity of polypeptides of the invention will be useful in treating the disease states. It is contemplated that antisense therapy or gene therapy could be applied to negatively regulate the expression of polypeptides of the invention.

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Other methods inhibiting expression of a protein include the introduction of antisense molecules to the nucleic acids of the present invention, their complements, or their translated RNA sequences, by methods known in the art. Further, the polypeptides of the present invention can be inhibited by using targeted deletion methods, or the insertion of a negative regulatory element such as a silencer, which is tissue specific.

The present invention still further provides cells genetically engineered *in vivo* to express the polynucleotides of the invention, wherein such polynucleotides are in operative association with a regulatory sequence heterologous to the host cell which drives expression of the polynucleotides in

the cell. These methods can be used to increase or decrease the expression of the polynucleotides of the present invention.

Knowledge of DNA sequences provided by the invention allows for modification of cells to permit, increase, or decrease, expression of endogenous polypeptide. Cells can be modified (e.g., by homologous recombination) to provide increased polypeptide expression by replacing, in whole or in part, the naturally occurring promoter with all or part of a heterologous promoter so that the cells express the protein at higher levels. The heterologous promoter is inserted in such a manner that it is operatively linked to the desired protein encoding sequences. See, for example, PCT International Publication No. WO 94/12650, PCT International Publication No. WO 92/20808, and PCT International Publication No. WO 91/09955. It is also contemplated that, in addition to heterologous promoter DNA, amplifiable marker DNA (e.g., ada, dhfr, and the multifunctional CAD gene which encodes carbamyl phosphate synthase, aspartate transcarbamylase, and dihydroorotase) and/or intron DNA may be inserted along with the heterologous promoter DNA. If linked to the desired protein coding sequence, amplification of the marker DNA by standard selection methods results in co-amplification of the desired protein coding sequences in the cells.

In another embodiment of the present invention, cells and tissues may be engineered to express an endogenous gene comprising the polynucleotides of the invention under the control of inducible regulatory elements, in which case the regulatory sequences of the endogenous gene may be replaced by homologous recombination. As described herein, gene targeting can be used to replace a gene's existing regulatory region with a regulatory sequence isolated from a different gene or a novel regulatory sequence synthesized by genetic engineering methods. Such regulatory sequences may be comprised of promoters, enhancers, scaffold-attachment regions, negative regulatory elements, transcriptional initiation sites, regulatory protein binding sites or combinations of said sequences. Alternatively, sequences which affect the structure or stability of the RNA or protein produced may be replaced, removed, added, or otherwise modified by targeting. These sequences include polyadenylation signals, mRNA stability elements, splice sites, leader sequences for enhancing or modifying transport or secretion properties of the protein, or other sequences which alter or improve the function or stability of protein or RNA molecules.

The targeting event may be a simple insertion of the regulatory sequence, placing the gene under the control of the new regulatory sequence, e.g., inserting a new promoter or enhancer or both upstream of a gene. Alternatively, the targeting event may be a simple deletion of a regulatory element, such as the deletion of a tissue-specific negative regulatory element. Alternatively, the targeting event may replace an existing element; for example, a tissue-specific enhancer can be replaced by an enhancer that has broader or different cell-type specificity than the naturally occurring elements. Here, the naturally occurring sequences are deleted and new sequences are

added. In all cases, the identification of the targeting event may be facilitated by the use of one or more selectable marker genes that are contiguous with the targeting DNA, allowing for the selection of cells in which the exogenous DNA has integrated into the cell genome. The identification of the targeting event may also be facilitated by the use of one or more marker genes exhibiting the property of negative selection, such that the negatively selectable marker is linked to the exogenous DNA, but configured such that the negatively selectable marker flanks the targeting sequence, and such that a correct homologous recombination event with sequences in the host cell genome does not result in the stable integration of the negatively selectable marker. Markers useful for this purpose include the Herpes Simplex Virus thymidine kinase (TK) gene or the bacterial xanthine-guanine phosphoribosyl-transferase (gpt) gene.

The gene targeting or gene activation techniques which can be used in accordance with this aspect of the invention are more particularly described in U.S. Patent No. 5,272,071 to Chappel; U.S. Patent No. 5,578,461 to Sherwin et al.; International Application No. PCT/US92/09627 (WO93/09222) by Selden et al.; and International Application No. PCT/US90/06436 (WO91/06667) by Skoultchi et al., each of which is incorporated by reference herein in its entirety.

#### 4.9 TRANSGENIC ANIMALS

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In preferred methods to determine biological functions of the polypeptides of the invention in vivo, one or more genes provided by the invention are either over expressed or inactivated in the germ line of animals using homologous recombination [Capecchi, Science 244:1288-1292 (1989)]. Animals in which the gene is over expressed, under the regulatory control of exogenous or endogenous promoter elements, are known as transgenic animals. Animals in which an endogenous gene has been inactivated by homologous recombination are referred to as "knockout" animals. Knockout animals, preferably non-human mammals, can be prepared as described in U.S. Patent No. 5,557,032, incorporated herein by reference. Transgenic animals are useful to determine the roles polypeptides of the invention play in biological processes, and preferably in disease states. Transgenic animals are useful as model systems to identify compounds that modulate lipid metabolism. Transgenic animals, preferably non-human mammals, are produced using methods as described in U.S. Patent No 5,489,743 and PCT Publication No. WO94/28122, incorporated herein by reference.

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Transgenic animals can be prepared wherein all or part of a promoter of the polynucleotides of the invention is either activated or inactivated to alter the level of expression of the polypeptides of the invention. Inactivation can be carried out using homologous recombination methods described above. Activation can be achieved by supplementing or even replacing the homologous promoter to provide for increased protein expression. The homologous

promoter can be supplemented by insertion of one or more heterologous enhancer elements known to confer promoter activation in a particular tissue.

The polynucleotides of the present invention also make possible the development, through, e.g., homologous recombination or knock out strategies, of animals that fail to express polypeptides of the invention or that express a variant polypeptide. Such animals are useful as models for studying the *in vivo* activities of polypeptide as well as for studying modulators of the polypeptides of the invention.

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In preferred methods to determine biological functions of the polypeptides of the invention *in vivo*, one or more genes provided by the invention are either over expressed or inactivated in the germ line of animals using homologous recombination [Capecchi, Science 244:1288-1292 (1989)]. Animals in which the gene is over expressed, under the regulatory control of exogenous or endogenous promoter elements, are known as transgenic animals. Animals in which an endogenous gene has been inactivated by homologous recombination are referred to as "knockout" animals. Knockout animals, preferably non-human mammals, can be prepared as described in U.S. Patent No. 5,557,032, incorporated herein by reference. Transgenic animals are useful to determine the roles polypeptides of the invention play in biological processes, and preferably in disease states. Transgenic animals are useful as model systems to identify compounds that modulate lipid metabolism. Transgenic animals, preferably non-human mammals, are produced using methods as described in U.S. Patent No 5,489,743 and PCT Publication No. WO94/28122, incorporated herein by reference.

Transgenic animals can be prepared wherein all or part of the polynucleotides of the invention promoter is either activated or inactivated to alter the level of expression of the polypeptides of the invention. Inactivation can be carried out using homologous recombination methods described above. Activation can be achieved by supplementing or even replacing the homologous promoter to provide for increased protein expression. The homologous promoter can be supplemented by insertion of one or more heterologous enhancer elements known to confer promoter activation in a particular tissue.

# 4.10 USES AND BIOLOGICAL ACTIVITY

The polynucleotides and proteins of the present invention are expected to exhibit one or more of the uses or biological activities (including those associated with assays cited herein) identified herein. Uses or activities described for proteins of the present invention may be provided by administration or use of such proteins or of polynucleotides encoding such proteins (such as, for example, in gene therapies or vectors suitable for introduction of DNA). The mechanism underlying the particular condition or pathology will dictate whether the

polypeptides of the invention, the polynucleotides of the invention or modulators (activators or inhibitors) thereof would be beneficial to the subject in need of treatment. Thus, "therapeutic compositions of the invention" include compositions comprising isolated polynucleotides (including recombinant DNA molecules, cloned genes and degenerate variants thereof) or polypeptides of the invention (including full length protein, mature protein and truncations or domains thereof), or compounds and other substances that modulate the overall activity of the target gene products, either at the level of target gene/protein expression or target protein activity. Such modulators include polypeptides, analogs, (variants), including fragments and fusion proteins, antibodies and other binding proteins; chemical compounds that directly or indirectly activate or inhibit the polypeptides of the invention (identified, e.g., via drug screening assays as described herein); antisense polynucleotides and polynucleotides suitable for triple helix formation; and in particular antibodies or other binding partners that specifically recognize one or more epitopes of the polypeptides of the invention.

The polypeptides of the present invention may likewise be involved in cellular activation or in one of the other physiological pathways described herein.

# 4.10.1 RESEARCH USES AND UTILITIES

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The polynucleotides provided by the present invention can be used by the research community for various purposes. The polynucleotides can be used to express recombinant protein for analysis, characterization or therapeutic use; as markers for tissues in which the corresponding protein is preferentially expressed (either constitutively or at a particular stage of tissue differentiation or development or in disease states); as molecular weight markers on gels; as chromosome markers or tags (when labeled) to identify chromosomes or to map related gene positions; to compare with endogenous DNA sequences in patients to identify potential genetic disorders; as probes to hybridize and thus discover novel, related DNA sequences; as a source of information to derive PCR primers for genetic fingerprinting; as a probe to "subtract-out" known sequences in the process of discovering other novel polynucleotides; for selecting and making oligomers for attachment to a "gene chip" or other support, including for examination of expression patterns; to raise anti-protein antibodies using DNA immunization techniques; and as an antigen to raise anti-DNA antibodies or elicit another immune response. Where the polynucleotide encodes a protein which binds or potentially binds to another protein (such as, for example, in a receptor-ligand interaction), the polynucleotide can also be used in interaction trap assays (such as, for example, that described in Gyuris et al., Cell 75:791-803 (1993)) to identify polynucleotides encoding the other protein with which binding occurs or to identify inhibitors of the binding interaction.

The polypeptides provided by the present invention can similarly be used in assays to determine biological activity, including in a panel of multiple proteins for high-throughput screening; to raise antibodies or to elicit another immune response; as a reagent (including the labeled reagent) in assays designed to quantitatively determine levels of the protein (or its receptor) in biological fluids; as markers for tissues in which the corresponding polypeptide is preferentially expressed (either constitutively or at a particular stage of tissue differentiation or development or in a disease state); and, of course, to isolate correlative receptors or ligands. Proteins involved in these binding interactions can also be used to screen for peptide or small molecule inhibitors or agonists of the binding interaction.

Any or all of these research utilities are capable of being developed into reagent grade or kit format for commercialization as research products.

Methods for performing the uses listed above are well known to those skilled in the art. References disclosing such methods include without limitation "Molecular Cloning: A Laboratory Manual", 2d ed., Cold Spring Harbor Laboratory Press, Sambrook, J., E. F. Fritsch and T. Maniatis eds., 1989, and "Methods in Enzymology: Guide to Molecular Cloning Techniques", Academic Press, Berger, S. L. and A. R. Kimmel eds., 1987.

# 4.10.2 NUTRITIONAL USES

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Polynucleotides and polypeptides of the present invention can also be used as nutritional sources or supplements. Such uses include without limitation use as a protein or amino acid supplement, use as a carbon source, use as a nitrogen source and use as a source of carbohydrate. In such cases the polypeptide or polynucleotide of the invention can be added to the feed of a particular organism or can be administered as a separate solid or liquid preparation, such as in the form of powder, pills, solutions, suspensions or capsules. In the case of microorganisms, the polypeptide or polynucleotide of the invention can be added to the medium in or on which the microorganism is cultured.

# 4.10.3 CYTOKINE AND CELL PROLIFERATION/DIFFERENTIATION ACTIVITY

A polypeptide of the present invention may exhibit activity relating to cytokine, cell proliferation (either inducing or inhibiting) or cell differentiation (either inducing or inhibiting) activity or may induce production of other cytokines in certain cell populations. A polynucleotide of the invention can encode a polypeptide exhibiting such attributes. Many protein factors discovered to date, including all known cytokines, have exhibited activity in one or more factor-dependent cell proliferation assays, and hence the assays serve as a convenient

confirmation of cytokine activity. The activity of therapeutic compositions of the present invention is evidenced by any one of a number of routine factor dependent cell proliferation assays for cell lines including, without limitation, 32D, DA2, DA1G, T10, B9, B9/11, BaF3, MC9/G, M+(preB M+), 2E8, RB5, DA1, 123, T1165, HT2, CTLL2, TF-1, Mo7e, CMK, HUVEC, and Caco. Therapeutic compositions of the invention can be used in the following:

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Assays for T-cell or thymocyte proliferation include without limitation those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 3, *In Vitro* assays for Mouse Lymphocyte Function 3.1-3.19; Chapter 7, Immunologic studies in Humans); Takai et al., J. Immunol. 137:3494-3500, 1986; Bertagnolli et al., J. Immunol. 145:1706-1712, 1990; Bertagnolli et al., Cellular Immunology 133:327-341, 1991; Bertagnolli, et al., I. Immunol. 149:3778-3783, 1992; Bowman et al., I. Immunol. 152:1756-1761, 1994.

Assays for cytokine production and/or proliferation of spleen cells, lymph node cells or thymocytes include, without limitation, those described in: Polyclonal T cell stimulation, Kruisbeek, A. M. and Shevach, E. M. In Current Protocols in Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 3.12.1-3.12.14, John Wiley and Sons, Toronto. 1994; and Measurement of mouse and human interleukin-γ, Schreiber, R. D. In Current Protocols in Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 6.8.1-6.8.8, John Wiley and Sons, Toronto. 1994.

Assays for proliferation and differentiation of hematopoietic and lymphopoietic cells 20 include, without limitation, those described in: Measurement of Human and Murine Interleukin 2 and Interleukin 4, Bottomly, K., Davis, L. S. and Lipsky, P. E. In Current Protocols in Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 6.3.1-6.3.12, John Wiley and Sons, Toronto. 1991; deVries et al., J. Exp. Med. 173:1205-1211, 1991; Moreau et al., Nature 336:690-692, 1988; Greenberger et al., Proc. Natl. Acad. Sci. U.S.A. 80:2931-2938, 1983; Measurement of mouse 25 and human interleukin 6--Nordan, R. In Current Protocols in Immunology. J. E. Coligan eds. Vol 1 pp. 6.6.1-6.6.5, John Wiley and Sons, Toronto. 1991; Smith et al., Proc. Natl. Aced. Sci. U.S.A. 83:1857-1861, 1986; Measurement of human Interleukin 11--Bennett, F., Giannotti, J., Clark, S. C. and Turner, K. J. In Current Protocols in Immunology, J. E. Coligan eds. Vol 1 pp. 6.15.1 John Wiley and Sons, Toronto. 1991; Measurement of mouse and human Interleukin 30 9--Ciarletta, A., Giannotti, J., Clark, S. C. and Turner, K. J. In Current Protocols in Immunology. J. E. Coligan eds. Vol 1 pp. 6.13.1, John Wiley and Sons, Toronto. 1991.

Assays for T-cell clone responses to antigens (which will identify, among others, proteins that affect APC-T cell interactions as well as direct T-cell effects by measuring proliferation and cytokine production) include, without limitation, those described in: Current Protocols in

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Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 3, *In Vitro* assays for Mouse Lymphocyte Function; Chapter 6, Cytokines and their cellular receptors; Chapter 7, Immunologic studies in Humans); Weinberger et al., Proc. Natl. Acad. Sci. USA 77:6091-6095, 1980; Weinberger et al., Eur. J. Immun. 11:405-411, 1981; Takai et al., J. Immunol. 137:3494-3500, 1986; Takai et al., J. Immunol. 140:508-512, 1988.

# 4.10.4 STEM CELL GROWTH FACTOR ACTIVITY

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A polypeptide of the present invention may exhibit stem cell growth factor activity and be involved in the proliferation, differentiation and survival of pluripotent and totipotent stem cells including primordial germ cells, embryonic stem cells, hematopoietic stem cells and/or germ line stem cells. Administration of the polypeptide of the invention to stem cells *in vivo* or *ex vivo* is expected to maintain and expand cell populations in a totipotential or pluripotential state which would be useful for re-engineering damaged or diseased tissues, transplantation, manufacture of bio-pharmaceuticals and the development of bio-sensors. The ability to produce large quantities of human cells has important working applications for the production of human proteins which currently must be obtained from non-human sources or donors, implantation of cells to treat diseases such as Parkinson's, Alzheimer's and other neurodegenerative diseases; tissues for grafting such as bone marrow, skin, cartilage, tendons, bone, muscle (including cardiac muscle), blood vessels, cornea, neural cells, gastrointestinal cells and others; and organs for transplantation such as kidney, liver, pancreas (including islet cells), heart and lung.

It is contemplated that multiple different exogenous growth factors and/or cytokines may be administered in combination with the polypeptide of the invention to achieve the desired effect, including any of the growth factors listed herein, other stem cell maintenance factors, and specifically including stem cell factor (SCF), leukemia inhibitory factor (LIF), Flt-3 ligand (Flt-3L), any of the interleukins, recombinant soluble IL-6 receptor fused to IL-6, macrophage inflammatory protein 1-alpha (MIP-1-alpha), G-CSF, GM-CSF, thrombopoietin (TPO), platelet factor 4 (PF-4), platelet-derived growth factor (PDGF), neural growth factors and basic fibroblast growth factor (bFGF).

Since totipotent stem cells can give rise to virtually any mature cell type, expansion of these cells in culture will facilitate the production of large quantities of mature cells. Techniques for culturing stem cells are known in the art and administration of polypeptides of the invention, optionally with other growth factors and/or cytokines, is expected to enhance the survival and proliferation of the stem cell populations. This can be accomplished by direct administration of the polypeptide of the invention to the culture medium. Alternatively, stroma cells transfected with a polynucleotide that encodes for the polypeptide of the invention can be used as a feeder

layer for the stem cell populations in culture or in vivo. Stromal support cells for feeder layers may include embryonic bone marrow fibroblasts, bone marrow stromal cells, fetal liver cells, or cultured embryonic fibroblasts (see U.S. Patent No. 5,690,926).

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Stem cells themselves can be transfected with a polynucleotide of the invention to induce autocrine expression of the polypeptide of the invention. This will allow for generation of undifferentiated totipotential/pluripotential stem cell lines that are useful as is or that can then be differentiated into the desired mature cell types. These stable cell lines can also serve as a source of undifferentiated totipotential/pluripotential mRNA to create cDNA libraries and templates for polymerase chain reaction experiments. These studies would allow for the isolation and identification of differentially expressed genes in stem cell populations that regulate stem cell proliferation and/or maintenance.

Expansion and maintenance of totipotent stem cell populations will be useful in the treatment of many pathological conditions. For example, polypeptides of the present invention may be used to manipulate stem cells in culture to give rise to neuroepithelial cells that can be used to augment or replace cells damaged by illness, autoimmune disease, accidental damage or genetic disorders. The polypeptide of the invention may be useful for inducing the proliferation of neural cells and for the regeneration of nerve and brain tissue, *i.e.* for the treatment of central and peripheral nervous system diseases and neuropathies, as well as mechanical and traumatic disorders which involve degeneration, death or trauma to neural cells or nerve tissue. In addition, the expanded stem cell populations can also be genetically altered for gene therapy purposes and to decrease host rejection of replacement tissues after grafting or implantation.

Expression of the polypeptide of the invention and its effect on stem cells can also be manipulated to achieve controlled differentiation of the stem cells into more differentiated cell types. A broadly applicable method of obtaining pure populations of a specific differentiated cell type from undifferentiated stem cell populations involves the use of a cell-type specific promoter driving a selectable marker. The selectable marker allows only cells of the desired type to survive. For example, stem cells can be induced to differentiate into cardiomyocytes (Wobus et al., Differentiation, 48: 173-182, (1991); Klug et al., J. Clin. Invest., 98(1): 216-224, (1998)) or skeletal muscle cells (Browder, L. W. In: *Principles of Tissue Engineering eds.* Lanza et al., Academic Press (1997)). Alternatively, directed differentiation of stem cells can be accomplished by culturing the stem cells in the presence of a differentiation factor such as retinoic acid and an antagonist of the polypeptide of the invention which would inhibit the effects of endogenous stem cell factor activity and allow differentiation to proceed.

In vitro cultures of stem cells can be used to determine if the polypeptide of the invention exhibits stem cell growth factor activity. Stem cells are isolated from any one of various cell

sources (including hematopoietic stem cells and embryonic stem cells) and cultured on a feeder layer, as described by Thompson et al. Proc. Natl. Acad. Sci, U.S.A., 92: 7844-7848 (1995), in the presence of the polypeptide of the invention alone or in combination with other growth factors or cytokines. The ability of the polypeptide of the invention to induce stem cells proliferation is determined by colony formation on semi-solid support *e.g.* as described by Bernstein et al., Blood, 77: 2316-2321 (1991).

# 4.10.5 HEMATOPOIESIS REGULATING ACTIVITY

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A polypeptide of the present invention may be involved in regulation of hematopoiesis and, consequently, in the treatment of myeloid or lymphoid cell disorders. Even marginal biological activity in support of colony forming cells or of factor-dependent cell lines indicates involvement in regulating hematopoiesis, e.g. in supporting the growth and proliferation of erythroid progenitor cells alone or in combination with other cytokines, thereby indicating utility, for example, in treating various anemias or for use in conjunction with irradiation/chemotherapy to stimulate the production of erythroid precursors and/or erythroid cells; in supporting the growth and proliferation of myeloid cells such as granulocytes and monocytes/macrophages (i.e., traditional CSF activity) useful, for example, in conjunction with chemotherapy to prevent or treat consequent myelo-suppression; in supporting the growth and proliferation of megakaryocytes and consequently of platelets thereby allowing prevention or treatment of various platelet disorders such as thrombocytopenia, and generally for use in place of or complimentary to platelet transfusions; and/or in supporting the growth and proliferation of hematopoietic stem cells which are capable of maturing to any and all of the above-mentioned hematopoietic cells and therefore find therapeutic utility in various stem cell disorders (such as those usually treated with transplantation, including, without limitation, aplastic anemia and paroxysmal nocturnal hemoglobinuria), as well as in repopulating the stem cell compartment post irradiation/chemotherapy, either in-vivo or ex-vivo (i.e., in conjunction with bone marrow transplantation or with peripheral progenitor cell transplantation (homologous or heterologous)) as normal cells or genetically manipulated for gene therapy.

Therapeutic compositions of the invention can be used in the following:

Suitable assays for proliferation and differentiation of various hematopoietic lines are cited above.

Assays for embryonic stem cell differentiation (which will identify, among others, proteins that influence embryonic differentiation hematopoiesis) include, without limitation, those described in: Johansson et al. Cellular Biology 15:141-151, 1995; Keller et al., Molecular and Cellular Biology 13:473-486, 1993; McClanahan et al., Blood 81:2903-2915, 1993.

Assays for stem cell survival and differentiation (which will identify, among others, proteins that regulate lympho-hematopoiesis) include, without limitation, those described in: Methylcellulose colony forming assays, Freshney, M. G. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 265-268, Wiley-Liss, Inc., New York, N.Y. 1994; Hirayama et al., Proc. Natl. Acad. Sci. USA 89:5907-5911, 1992; Primitive hematopoietic colony forming cells with high proliferative potential, McNiece, I. K. and Briddell, R. A. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 23-39, Wiley-Liss, Inc., New York, N.Y. 1994; Neben et al., Experimental Hematology 22:353-359, 1994; Cobblestone area forming cell assay, Ploemacher, R. E. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 1-21, Wiley-Liss, Inc., New York, N.Y. 1994; Long term bone marrow cultures in the presence of stromal cells, Spooncer, E., Dexter, M. and Allen, T. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 163-179, Wiley-Liss, Inc., New York, N.Y. 1994; Long term culture initiating cell assay, Sutherland, H. J. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 139-162, Wiley-Liss, Inc., New York, N.Y. 1994.

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# 4.10.6 TISSUE GROWTH ACTIVITY

A polypeptide of the present invention also may be involved in bone, cartilage, tendon, ligament and/or nerve tissue growth or regeneration, as well as in wound healing and tissue repair and replacement, and in healing of burns, incisions and ulcers.

A polypeptide of the present invention which induces cartilage and/or bone growth in circumstances where bone is not normally formed, has application in the healing of bone fractures and cartilage damage or defects in humans and other animals. Compositions of a polypeptide, antibody, binding partner, or other modulator of the invention may have prophylactic use in closed as well as open fracture reduction and also in the improved fixation of artificial joints. De novo bone formation induced by an osteogenic agent contributes to the repair of congenital, trauma induced, or oncologic resection induced craniofacial defects, and also is useful in cosmetic plastic surgery.

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A polypeptide of this invention may also be involved in attracting bone-forming cells, stimulating growth of bone-forming cells, or inducing differentiation of progenitors of bone-forming cells. Treatment of osteoporosis, osteoarthritis, bone degenerative disorders, or periodontal disease, such as through stimulation of bone and/or cartilage repair or by blocking inflammation or processes of tissue destruction (collagenase activity, osteoclast activity, etc.) mediated by inflammatory processes may also be possible using the composition of the invention.

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Another category of tissue regeneration activity that may involve the polypeptide of the present invention is tendon/ligament formation. Induction of tendon/ligament-like tissue or other tissue formation in circumstances where such tissue is not normally formed, has application in the healing of tendon or ligament tears, deformities and other tendon or ligament defects in humans and other animals. Such a preparation employing a tendon/ligament-like tissue inducing protein may have prophylactic use in preventing damage to tendon or ligament tissue, as well as use in the improved fixation of tendon or ligament to bone or other tissues, and in repairing defects to tendon or ligament tissue. De novo tendon/ligament-like tissue formation induced by a composition of the present invention contributes to the repair of congenital, trauma induced, or other tendon or ligament defects of other origin, and is also useful in cosmetic plastic surgery for attachment or repair of tendons or ligaments. The compositions of the present invention may provide environment to attract tendon- or ligament-forming cells, stimulate growth of tendon- or ligament-forming cells, induce differentiation of progenitors of tendon- or ligament-forming cells, or induce growth of tendon/ligament cells or progenitors ex vivo for return in vivo to effect tissue repair. The compositions of the invention may also be useful in the treatment of tendinitis, carpal tunnel syndrome and other tendon or ligament defects. The compositions may also include an appropriate matrix and/or sequestering agent as a carrier as is well known in the art.

The compositions of the present invention may also be useful for proliferation of neural cells and for regeneration of nerve and brain tissue, *i.e.* for the treatment of central and peripheral nervous system diseases and neuropathies, as well as mechanical and traumatic disorders, which involve degeneration, death or trauma to neural cells or nerve tissue. More specifically, a composition may be used in the treatment of diseases of the peripheral nervous system, such as peripheral nerve injuries, peripheral neuropathy and localized neuropathies, and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager syndrome. Further conditions which may be treated in accordance with the present invention include mechanical and traumatic disorders, such as spinal cord disorders, head trauma and cerebrovascular diseases such as stroke. Peripheral neuropathies resulting from chemotherapy or other medical therapies may also be treatable using a composition of the invention.

Compositions of the invention may also be useful to promote better or faster closure of non-healing wounds, including without limitation pressure ulcers, ulcers associated with vascular insufficiency, surgical and traumatic wounds, and the like.

Compositions of the present invention may also be involved in the generation or regeneration of other tissues, such as organs (including, for example, pancreas, liver, intestine,

kidney, skin, endothelium), muscle (smooth, skeletal or cardiac) and vascular (including vascular endothelium) tissue, or for promoting the growth of cells comprising such tissues. Part of the desired effects may be by inhibition or modulation of fibrotic scarring may allow normal tissue to regenerate. A polypeptide of the present invention may also exhibit angiogenic activity.

A composition of the present invention may also be useful for gut protection or regeneration and treatment of lung or liver fibrosis, reperfusion injury in various tissues, and conditions resulting from systemic cytokine damage.

A composition of the present invention may also be useful for promoting or inhibiting differentiation of tissues described above from precursor tissues or cells; or for inhibiting the growth of tissues described above.

Therapeutic compositions of the invention can be used in the following:

Assays for tissue generation activity include, without limitation, those described in: International Patent Publication No. WO95/16035 (bone, cartilage, tendon); International Patent Publication No. WO95/05846 (nerve, neuronal); International Patent Publication No. WO91/07491 (skin, endothelium).

Assays for wound healing activity include, without limitation, those described in: Winter, Epidermal Wound Healing, pps. 71-112 (Maibach, H. I. and Rovee, D. T., eds.), Year Book Medical Publishers, Inc., Chicago, as modified by Eaglstein and Mertz, J. Invest. Dermatol 71:382-84 (1978).

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# 4.10.7 IMMUNE STIMULATING OR SUPPRESSING ACTIVITY

A polypeptide of the present invention may also exhibit immune stimulating or immune suppressing activity, including without limitation the activities for which assays are described herein. A polynucleotide of the invention can encode a polypeptide exhibiting such activities. A protein may be useful in the treatment of various immune deficiencies and disorders (including severe combined immunodeficiency (SCID)), e.g., in regulating (up or down) growth and proliferation of T and/or B lymphocytes, as well as effecting the cytolytic activity of NK cells and other cell populations. These immune deficiencies may be genetic or be caused by viral (e.g., HIV) as well as bacterial or fungal infections, or may result from autoimmune disorders. More specifically, infectious diseases causes by viral, bacterial, fungal or other infection may be treatable using a protein of the present invention, including infections by HIV, hepatitis viruses, herpes viruses, mycobacteria, Leishmania spp., malaria spp. and various fungal infections such as candidiasis. Of course, in this regard, proteins of the present invention may also be useful where a boost to the immune system generally may be desirable, i.e., in the treatment of cancer.

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Autoimmune disorders which may be treated using a protein of the present invention include, for example, connective tissue disease, multiple sclerosis, systemic lupus erythematosus, rheumatoid arthritis, autoimmune pulmonary inflammation, Guillain-Barre syndrome, autoimmune thyroiditis, insulin dependent diabetes mellitis, myasthenia gravis, graft-versus-host disease and autoimmune inflammatory eye disease. Such a protein (or antagonists thereof, including antibodies) of the present invention may also to be useful in the treatment of allergic reactions and conditions (e.g., anaphylaxis, serum sickness, drug reactions, food allergies, insect venom allergies, mastocytosis, allergic rhinitis, hypersensitivity pneumonitis, urticaria, angioedema, eczema, atopic dermatitis, allergic contact dermatitis, erythema multiforme, Stevens-Johnson syndrome, allergic conjunctivitis, atopic keratoconjunctivitis, venereal keratoconjunctivitis, giant papillary conjunctivitis and contact allergies), such as asthma (particularly allergic asthma) or other respiratory problems. Other conditions, in which immune suppression is desired (including, for example, organ transplantation), may also be treatable using a protein (or antagonists thereof) of the present invention. The therapeutic effects of the polypeptides or antagonists thereof on allergic reactions can be evaluated by in vivo animals models such as the cumulative contact enhancement test (Lastborn et al., Toxicology 125: 59-66, 1998), skin prick test (Hoffmann et al., Allergy 54: 446-54, 1999), guinea pig skin sensitization test (Vohr et al., Arch. Toxocol. 73: 501-9), and murine local lymph node assay (Kimber et al., J. Toxicol. Environ. Health 53: 563-79).

Using the proteins of the invention it may also be possible to modulate immune responses, in a number of ways. Down regulation may be in the form of inhibiting or blocking an immune response already in progress or may involve preventing the induction of an immune response. The functions of activated T cells may be inhibited by suppressing T cell responses or by inducing specific tolerance in T cells, or both. Immunosuppression of T cell responses is generally an active, non-antigen-specific, process which requires continuous exposure of the T cells to the suppressive agent. Tolerance, which involves inducing non-responsiveness or anergy in T cells, is distinguishable from immunosuppression in that it is generally antigen-specific and persists after exposure to the tolerizing agent has ceased. Operationally, tolerance can be demonstrated by the lack of a T cell response upon reexposure to specific antigen in the absence of the tolerizing agent.

Down regulating or preventing one or more antigen functions (including without limitation B lymphocyte antigen functions (such as, for example, B7)), e.g., preventing high level lymphokine synthesis by activated T cells, will be useful in situations of tissue, skin and organ transplantation and in graft-versus-host disease (GVHD). For example, blockage of T cell function should result in reduced tissue destruction in tissue transplantation. Typically, in tissue

transplants, rejection of the transplant is initiated through its recognition as foreign by T cells, followed by an immune reaction that destroys the transplant. The administration of a therapeutic composition of the invention may prevent cytokine synthesis by immune cells, such as T cells, and thus acts as an immunosuppressant. Moreover, a lack of costimulation may also be sufficient to anergize the T cells, thereby inducing tolerance in a subject. Induction of long-term tolerance by B lymphocyte antigen-blocking reagents may avoid the necessity of repeated administration of these blocking reagents. To achieve sufficient immunosuppression or tolerance in a subject, it may also be necessary to block the function of a combination of B lymphocyte antigens.

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The efficacy of particular therapeutic compositions in preventing organ transplant rejection or GVHD can be assessed using animal models that are predictive of efficacy in humans. Examples of appropriate systems which can be used include allogeneic cardiac grafts in rats and xenogeneic pancreatic islet cell grafts in mice, both of which have been used to examine the immunosuppressive effects of CTLA4Ig fusion proteins in vivo as described in Lenschow et al., Science 257:789-792 (1992) and Turka et al., Proc. Natl. Acad. Sci USA, 89:11102-11105 (1992). In addition, murine models of GVHD (see Paul ed., Fundamental Immunology, Raven Press, New York, 1989, pp. 846-847) can be used to determine the effect of therapeutic compositions of the invention on the development of that disease.

Blocking antigen function may also be therapeutically useful for treating autoimmune diseases. Many autoimmune disorders are the result of inappropriate activation of T cells that are reactive against self tissue and which promote the production of cytokines and autoantibodies involved in the pathology of the diseases. Preventing the activation of autoreactive T cells may reduce or eliminate disease symptoms. Administration of reagents which block stimulation of T cells can be used to inhibit T cell activation and prevent production of autoantibodies or T cell-derived cytokines which may be involved in the disease process. Additionally, blocking reagents may induce antigen-specific tolerance of autoreactive T cells which could lead to long-term relief from the disease. The efficacy of blocking reagents in preventing or alleviating autoimmune disorders can be determined using a number of well-characterized animal models of human autoimmune diseases. Examples include murine experimental autoimmune encephalitis, systemic lupus erythmatosis in MRL/lpr/lpr mice or NZB hybrid mice, murine autoimmune collagen arthritis, diabetes mellitus in NOD mice and BB rats, and murine experimental myasthenia gravis (see Paul ed., Fundamental Immunology, Raven Press, New York, 1989, pp. 840-856).

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Upregulation of an antigen function (e.g., a B lymphocyte antigen function), as a means of up regulating immune responses, may also be useful in therapy. Upregulation of immune responses may be in the form of enhancing an existing immune response or eliciting an initial

immune response. For example, enhancing an immune response may be useful in cases of viral infection, including systemic viral diseases such as influenza, the common cold, and encephalitis.

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Alternatively, anti-viral immune responses may be enhanced in an infected patient by removing T cells from the patient, costimulating the T cells in vitro with viral antigen-pulsed APCs either expressing a peptide of the present invention or together with a stimulatory form of a soluble peptide of the present invention and reintroducing the in vitro activated T cells into the patient. Another method of enhancing anti-viral immune responses would be to isolate infected cells from a patient, transfect them with a nucleic acid encoding a protein of the present invention as described herein such that the cells express all or a portion of the protein on their surface, and reintroduce the transfected cells into the patient. The infected cells would now be capable of delivering a costimulatory signal to, and thereby activate, T cells in vivo.

A polypeptide of the present invention may provide the necessary stimulation signal to T cells to induce a T cell mediated immune response against the transfected tumor cells. In addition, tumor cells which lack MHC class I or MHC class II molecules, or which fail to reexpress sufficient mounts of MHC class I or MHC class II molecules, can be transfected with nucleic acid encoding all or a portion of (e.g., a cytoplasmic-domain truncated portion) of an MHC class I alpha chain protein and  $\beta_2$  microglobulin protein or an MHC class II alpha chain protein and an MHC class II beta chain protein to thereby express MHC class I or MHC class II proteins on the cell surface. Expression of the appropriate class I or class II MHC in conjunction with a peptide having the activity of a B lymphocyte antigen (e.g., B7-1, B7-2, B7-3) induces a T cell mediated immune response against the transfected tumor cell. Optionally, a gene encoding an antisense construct which blocks expression of an MHC class II associated protein, such as the invariant chain, can also be cotransfected with a DNA encoding a peptide having the activity of a B lymphocyte antigen to promote presentation of tumor associated antigens and induce tumor specific immunity. Thus, the induction of a T cell mediated immune response in a human subject may be sufficient to overcome tumor-specific tolerance in the subject.

The activity of a protein of the invention may, among other means, be measured by the following methods:

Suitable assays for thymocyte or splenocyte cytotoxicity include, without limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 3, In Vitro assays for Mouse Lymphocyte Function 3.1-3.19; Chapter 7, Immunologic studies in Humans); Herrmann et al., Proc. Natl. Acad. Sci. USA 78:2488-2492, 1981; Herrmann et al., J. Immunol. 128:1968-1974, 1982; Handa et al., J.

Immunol. 135:1564-1572, 1985; Takai et al., I. Immunol. 137:3494-3500, 1986; Takai et al., J. Immunol. 140:508-512, 1988; Bowman et al., J. Virology 61:1992-1998; Bertagnolli et al., Cellular Immunology 133:327-341, 1991; Brown et al., J. Immunol. 153:3079-3092, 1994.

Assays for T-cell-dependent immunoglobulin responses and isotype switching (which will identify, among others, proteins that modulate T-cell dependent antibody responses and that affect Th1/Th2 profiles) include, without limitation, those described in: Maliszewski, J. Immunol. 144:3028-3033, 1990; and Assays for B cell function. In vitro antibody production, Mond, J. J. and Brunswick, M. In Current Protocols in Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 3.8.1-3.8.16, John Wiley and Sons, Toronto. 1994.

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Mixed lymphocyte reaction (MLR) assays (which will identify, among others, proteins that generate predominantly Th1 and CTL responses) include, without limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 3, In Vitro assays for Mouse Lymphocyte Function 3.1-3.19; Chapter 7, Immunologic studies in Humans); Takai et al., J. Immunol. 137:3494-3500, 1986; Takai et al., J. Immunol. 140:508-512, 1988; Bertagnolli et al., J. Immunol. 149:3778-3783, 1992.

Dendritic cell-dependent assays (which will identify, among others, proteins expressed by dendritic cells that activate naive T-cells) include, without limitation, those described in: Guery et al., J. Immunol. 134:536-544, 1995; Inaba et al., Journal of Experimental Medicine 173:549-559, 1991; Macatonia et al., Journal of Immunology 154:5071-5079, 1995; Porgador et al., Journal of Experimental Medicine 182:255-260, 1995; Nair et al., Journal of Virology 67:4062-4069, 1993; Huang et al., Science 264:961-965, 1994; Macatonia et al., Journal of Experimental Medicine 169:1255-1264, 1989; Bhardwaj et al., Journal of Clinical Investigation 94:797-807, 1994; and Inaba et al., Journal of Experimental Medicine 172:631-640, 1990.

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Assays for lymphocyte survival/apoptosis (which will identify, among others, proteins that prevent apoptosis after superantigen induction and proteins that regulate lymphocyte homeostasis) include, without limitation, those described in: Darzynkiewicz et al., Cytometry 13:795-808, 1992; Gorczyca et al., Leukemia 7:659-670, 1993; Gorczyca et al., Cancer Research 53:1945-1951, 1993; Itoh et al., Cell 66:233-243, 1991; Zacharchuk, Journal of Immunology 145:4037-4045, 1990; Zamai et al., Cytometry 14:891-897, 1993; Gorczyca et al., International Journal of Oncology 1:639-648, 1992.

Assays for proteins that influence early steps of T-cell commitment and development include, without limitation, those described in: Antica et al., Blood 84:111-117, 1994; Fine et al., Cellular Immunology 155:111-122, 1994; Galy et al., Blood 85:2770-2778, 1995; Toki et al., Proc. Nat. Acad Sci. USA 88:7548-7551, 1991.

#### 4.10.8 ACTIVIN/INHIBIN ACTIVITY

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A polypeptide of the present invention may also exhibit activin- or inhibin-related activities. A polynucleotide of the invention may encode a polypeptide exhibiting such characteristics. Inhibins are characterized by their ability to inhibit the release of follicle stimulating hormone (FSH), while activins and are characterized by their ability to stimulate the release of follicle stimulating hormone (FSH). Thus, a polypeptide of the present invention, alone or in heterodimers with a member of the inhibin family, may be useful as a contraceptive based on the ability of inhibins to decrease fertility in female mammals and decrease spermatogenesis in male mammals. Administration of sufficient amounts of other inhibins can induce infertility in these mammals. Alternatively, the polypeptide of the invention, as a homodimer or as a heterodimer with other protein subunits of the inhibin group, may be useful as a fertility inducing therapeutic, based upon the ability of activin molecules in stimulating FSH release from cells of the anterior pituitary. See, for example, U.S. Pat. No. 4,798,885. A polypeptide of the invention may also be useful for advancement of the onset of fertility in sexually immature mammals, so as to increase the lifetime reproductive performance of domestic animals such as, but not limited to, cows, sheep and pigs.

The activity of a polypeptide of the invention may, among other means, be measured by the following methods.

Assays for activin/inhibin activity include, without limitation, those described in: Vale et al., Endocrinology 91:562-572, 1972; Ling et al., Nature 321:779-782, 1986; Vale et al., Nature 321:776-779, 1986; Mason et al., Nature 318:659-663, 1985; Forage et al., Proc. Natl. Acad. Sci. USA 83:3091-3095, 1986.

### 4.10.9 CHEMOTACTIC/CHEMOKINETIC ACTIVITY

A polypeptide of the present invention may be involved in chemotactic or chemokinetic activity for mammalian cells, including, for example, monocytes, fibroblasts, neutrophils, T-cells, mast cells, eosinophils, epithelial and/or endothelial cells. A polynucleotide of the invention can encode a polypeptide exhibiting such attributes. Chemotactic and chemokinetic receptor activation can be used to mobilize or attract a desired cell population to a desired site of action. Chemotactic or chemokinetic compositions (e.g. proteins, antibodies, binding partners, or modulators of the invention) provide particular advantages in treatment of wounds and other trauma to tissues, as well as in treatment of localized infections. For example, attraction of lymphocytes, monocytes or neutrophils to tumors or sites of infection may result in improved immune responses against the tumor or infecting agent.

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A protein or peptide has chemotactic activity for a particular cell population if it can stimulate, directly or indirectly, the directed orientation or movement of such cell population. Preferably, the protein or peptide has the ability to directly stimulate directed movement of cells. Whether a particular protein has chemotactic activity for a population of cells can be readily determined by employing such protein or peptide in any known assay for cell chemotaxis.

Therapeutic compositions of the invention can be used in the following:

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Assays for chemotactic activity (which will identify proteins that induce or prevent chemotaxis) consist of assays that measure the ability of a protein to induce the migration of cells across a membrane as well as the ability of a protein to induce the adhesion of one cell population to another cell population. Suitable assays for movement and adhesion include, without limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Marguiles, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 6.12, Measurement of alpha and beta Chemokines 6.12.1-6.12.28; Taub et al. J. Clin. Invest. 95:1370-1376, 1995; Lind et al. APMIS 103:140-146, 1995; Muller et al Eur. J. Immunol. 25:1744-1748; Gruber et al. J. of Immunol. 152:5860-5867, 1994; Johnston et al. J. of Immunol. 153:1762-1768, 1994.

#### 4.10.10 HEMOSTATIC AND THROMBOLYTIC ACTIVITY

A polypeptide of the invention may also be involved in hemostatis or thrombolysis or thrombosis. A polynucleotide of the invention can encode a polypeptide exhibiting such attributes. Compositions may be useful in treatment of various coagulation disorders (including hereditary disorders, such as hemophilias) or to enhance coagulation and other hemostatic events in treating wounds resulting from trauma, surgery or other causes. A composition of the invention may also be useful for dissolving or inhibiting formation of thromboses and for treatment and prevention of conditions resulting therefrom (such as, for example, infarction of 25 cardiac and central nervous system vessels (e.g., stroke).

Therapeutic compositions of the invention can be used in the following:

Assay for hemostatic and thrombolytic activity include, without limitation, those described in: Linet et al., J. Clin. Pharmacol. 26:131-140, 1986; Burdick et al., Thrombosis Res. 45:413-419, 1987; Humphrey et al., Fibrinolysis 5:71-79 (1991); Schaub, Prostaglandins 35:467-474, 1988.

#### CANCER DIAGNOSIS AND THERAPY 4.10.11

Polypeptides of the invention may be involved in cancer cell generation, proliferation or metastasis. Detection of the presence or amount of polynucleotides or polypeptides of the

invention may be useful for the diagnosis and/or prognosis of one or more types of cancer. For example, the presence or increased expression of a polynucleotide/polypeptide of the invention may indicate a hereditary risk of cancer, a precancerous condition, or an ongoing malignancy. Conversely, a defect in the gene or absence of the polypeptide may be associated with a cancer condition. Identification of single nucleotide polymorphisms associated with cancer or a predisposition to cancer may also be useful for diagnosis or prognosis.

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Cancer treatments promote tumor regression by inhibiting tumor cell proliferation, inhibiting angiogenesis (growth of new blood vessels that is necessary to support tumor growth) and/or prohibiting metastasis by reducing tumor cell motility or invasiveness. Therapeutic compositions of the invention may be effective in adult and pediatric oncology including in solid phase tumors/malignancies, locally advanced tumors, human soft tissue sarcomas, metastatic cancer, including lymphatic metastases, blood cell malignancies including multiple myeloma, acute and chronic leukemias, and lymphomas, head and neck cancers including mouth cancer, larynx cancer and thyroid cancer, lung cancers including small cell carcinoma and non-small cell cancers, breast cancers including small cell carcinoma and ductal carcinoma, gastrointestinal cancers including esophageal cancer, stomach cancer, colon cancer, colorectal cancer and polyps associated with colorectal neoplasia, pancreatic cancers, liver cancer, urologic cancers including bladder cancer and prostate cancer, malignancies of the female genital tract including ovarian carcinoma, uterine (including endometrial) cancers, and solid tumor in the ovarian follicle, kidney cancers including renal cell carcinoma, brain cancers including intrinsic brain tumors, neuroblastoma, astrocytic brain tumors, gliomas, metastatic tumor cell invasion in the central nervous system, bone cancers including osteomas, skin cancers including malignant melanoma, tumor progression of human skin keratinocytes, squamous cell carcinoma, basal cell carcinoma, hemangiopericytoma and Karposi's sarcoma.

Polypeptides, polynucleotides, or modulators of polypeptides of the invention (including inhibitors and stimulators of the biological activity of the polypeptide of the invention) may be administered to treat cancer. Therapeutic compositions can be administered in therapeutically effective dosages alone or in combination with adjuvant cancer therapy such as surgery, chemotherapy, radiotherapy, thermotherapy, and laser therapy, and may provide a beneficial effect, *e.g.* reducing tumor size, slowing rate of tumor growth, inhibiting metastasis, or otherwise improving overall clinical condition, without necessarily eradicating the cancer.

The composition can also be administered in therapeutically effective amounts as a portion of an anti-cancer cocktail. An anti-cancer cocktail is a mixture of the polypeptide or modulator of the invention with one or more anti-cancer drugs in addition to a pharmaceutically acceptable carrier for delivery. The use of anti-cancer cocktails as a cancer treatment is routine.

Anti-cancer drugs that are well known in the art and can be used as a treatment in combination with the polypeptide or modulator of the invention include: Actinomycin D, Aminoglutethimide, Asparaginase, Bleomycin, Busulfan, Carboplatin, Carmustine, Chlorambucil, Cisplatin (cisDDP), Cyclophosphamide, Cytarabine HCl (Cytosine arabinoside), Dacarbazine, Dactinomycin,
Daunorubicin HCl, Doxorubicin HCl, Estramustine phosphate sodium, Etoposide (V16-213), Floxuridine, 5-Fluorouracil (5-Fu), Flutamide, Hydroxyurea (hydroxycarbamide), Ifosfamide, Interferon Alpha-2a, Interferon Alpha-2b, Leuprolide acetate (LHRH-releasing factor analog), Lomustine, Mechlorethamine HCl (nitrogen mustard), Melphalan, Mercaptopurine, Mesna, Methotrexate (MTX), Mitomycin, Mitoxantrone HCl, Octreotide, Plicamycin, Procarbazine HCl,
Streptozocin, Tamoxifen citrate, Thioguanine, Thiotepa, Vinblastine sulfate, Vincristine sulfate, Amsacrine, Azacitidine, Hexamethylmelamine, Interleukin-2, Mitoguazone, Pentostatin, Semustine, Teniposide, and Vindesine sulfate.

In addition, therapeutic compositions of the invention may be used for prophylactic treatment of cancer. There are hereditary conditions and/or environmental situations (e.g. exposure to carcinogens) known in the art that predispose an individual to developing cancers. Under these circumstances, it may be beneficial to treat these individuals with therapeutically effective doses of the polypeptide of the invention to reduce the risk of developing cancers.

In vitro models can be used to determine the effective doses of the polypeptide of the invention as a potential cancer treatment. These in vitro models include proliferation assays of cultured tumor cells, growth of cultured tumor cells in soft agar (see Freshney, (1987) Culture of Animal Cells: A Manual of Basic Technique, Wily-Liss, New York, NY Ch 18 and Ch 21), tumor systems in nude mice as described in Giovanella et al., J. Natl. Can. Inst., 52: 921-30 (1974), mobility and invasive potential of tumor cells in Boyden Chamber assays as described in Pilkington et al., Anticancer Res., 17: 4107-9 (1997), and angiogenesis assays such as induction of vascularization of the chick chorioallantoic membrane or induction of vascular endothelial cell migration as described in Ribatta et al., Intl. J. Dev. Biol., 40: 1189-97 (1999) and Li et al., Clin. Exp. Metastasis, 17:423-9 (1999), respectively. Suitable tumor cells lines are available, e.g. from American Type Tissue Culture Collection catalogs.

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# 4.10.12 RECEPTOR/LIGAND ACTIVITY

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A polypeptide of the present invention may also demonstrate activity as receptor, receptor ligand or inhibitor or agonist of receptor/ligand interactions. A polynucleotide of the invention can encode a polypeptide exhibiting such characteristics. Examples of such receptors and ligands include, without limitation, cytokine receptors and their ligands, receptor kinases and their ligands, receptor phosphatases and their ligands, receptors involved in cell-cell interactions

and their ligands (including without limitation, cellular adhesion molecules (such as selectins, integrins and their ligands) and receptor/ligand pairs involved in antigen presentation, antigen recognition and development of cellular and humoral immune responses. Receptors and ligands are also useful for screening of potential peptide or small molecule inhibitors of the relevant receptor/ligand interaction. A protein of the present invention (including, without limitation, fragments of receptors and ligands) may themselves be useful as inhibitors of receptor/ligand interactions.

The activity of a polypeptide of the invention may, among other means, be measured by the following methods:

Suitable assays for receptor-ligand activity include without limitation those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley- Interscience (Chapter 7.28, Measurement of Cellular Adhesion under static conditions 7.28.1-7.28.22), Takai et al., Proc. Natl. Acad. Sci. USA 84:6864-6868, 1987; Bierer et al., J. Exp. Med. 168:1145-1156, 1988; Rosenstein et al., J. Exp. Med. 169:149-160 1989; Stoltenborg et al., J. Immunol. Methods 175:59-68, 1994; Stitt et al., Cell 80:661-670, 1995.

By way of example, the polypeptides of the invention may be used as a receptor for a ligand(s) thereby transmitting the biological activity of that ligand(s). Ligands may be identified through binding assays, affinity chromatography, dihybrid screening assays, BIAcore assays, gel overlay assays, or other methods known in the art.

Studies characterizing drugs or proteins as agonist or antagonist or partial agonists or a partial antagonist require the use of other proteins as competing ligands. The polypeptides of the present invention or ligand(s) thereof may be labeled by being coupled to radioisotopes, colorimetric molecules or a toxin molecules by conventional methods. ("Guide to Protein Purification" Murray P. Deutscher (ed) Methods in Enzymology Vol. 182 (1990) Academic Press, Inc. San Diego). Examples of radioisotopes include, but are not limited to, tritium and carbon-14. Examples of colorimetric molecules include, but are not limited to, fluorescent molecules such as fluorescamine, or rhodamine or other colorimetric molecules. Examples of toxins include, but are not limited, to ricin.

#### 4.10.13 DRUG SCREENING

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This invention is particularly useful for screening chemical compounds by using the novel polypeptides or binding fragments thereof in any of a variety of drug screening techniques. The polypeptides or fragments employed in such a test may either be free in solution, affixed to a solid support, borne on a cell surface or located intracellularly. One method of drug screening

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utilizes eukaryotic or prokaryotic host cells which are stably transformed with recombinant nucleic acids expressing the polypeptide or a fragment thereof. Drugs are screened against such transformed cells in competitive binding assays. Such cells, either in viable or fixed form, can be used for standard binding assays. One may measure, for example, the formation of complexes between polypeptides of the invention or fragments and the agent being tested or examine the diminution in complex formation between the novel polypeptides and an appropriate cell line, which are well known in the art.

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Sources for test compounds that may be screened for ability to bind to or modulate (*i.e.*, increase or decrease) the activity of polypeptides of the invention include (1) inorganic and organic chemical libraries, (2) natural product libraries, and (3) combinatorial libraries comprised of either random or mimetic peptides, oligonucleotides or organic molecules.

Chemical libraries may be readily synthesized or purchased from a number of commercial sources, and may include structural analogs of known compounds or compounds that are identified as "hits" or "leads" via natural product screening.

The sources of natural product libraries are microorganisms (including bacteria and fungi), animals, plants or other vegetation, or marine organisms, and libraries of mixtures for screening may be created by: (1) fermentation and extraction of broths from soil, plant or marine microorganisms or (2) extraction of the organisms themselves. Natural product libraries include polyketides, non-ribosomal peptides, and (non-naturally occurring) variants thereof. For a review, see *Science* 282:63-68 (1998).

Combinatorial libraries are composed of large numbers of peptides, oligonucleotides or organic compounds and can be readily prepared by traditional automated synthesis methods, PCR, cloning or proprietary synthetic methods. Of particular interest are peptide and oligonucleotide combinatorial libraries. Still other libraries of interest include peptide, protein, peptidomimetic, multiparallel synthetic collection, recombinatorial, and polypeptide libraries. For a review of combinatorial chemistry and libraries created therefrom, see Myers, Curr. Opin. Biotechnol. 8:701-707 (1997). For reviews and examples of peptidomimetic libraries, see Al-Obeidi et al., Mol. Biotechnol, 9(3):205-23 (1998); Hruby et al., Curr Opin Chem Biol, 1(1):114-19 (1997); Dorner et al., Bioorg Med Chem, 4(5):709-15 (1996) (alkylated dipeptides).

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Identification of modulators through use of the various libraries described herein permits modification of the candidate "hit" (or "lead") to optimize the capacity of the "hit" to bind a polypeptide of the invention. The molecules identified in the binding assay are then tested for antagonist or agonist activity in *in vivo* tissue culture or animal models that are well known in the art. In brief, the molecules are titrated into a plurality of cell cultures or animals and then tested for either cell/animal death or prolonged survival of the animal/cells.

The binding molecules thus identified may be complexed with toxins, e.g., ricin or cholera, or with other compounds that are toxic to cells such as radioisotopes. The toxin-binding molecule complex is then targeted to a tumor or other cell by the specificity of the binding molecule for a polypeptide of the invention. Alternatively, the binding molecules may be complexed with imaging agents for targeting and imaging purposes.

# 4.10.14 ASSAY FOR RECEPTOR ACTIVITY

The invention also provides methods to detect specific binding of a polypeptide e.g. a ligand or a receptor. The art provides numerous assays particularly useful for identifying previously unknown binding partners for receptor polypeptides of the invention. For example, expression cloning using mammalian or bacterial cells, or dihybrid screening assays can be used to identify polynucleotides encoding binding partners. As another example, affinity chromatography with the appropriate immobilized polypeptide of the invention can be used to isolate polypeptides that recognize and bind polypeptides of the invention. There are a number of different libraries used for the identification of compounds, and in particular small molecules, that modulate (i.e., increase or decrease) biological activity of a polypeptide of the invention. Ligands for receptor polypeptides of the invention can also be identified by adding exogenous ligands, or cocktails of ligands to two cells populations that are genetically identical except for the expression of the receptor of the invention: one cell population expresses the receptor of the invention whereas the other does not. The response of the two cell populations to the addition of ligands(s) are then compared. Alternatively, an expression library can be co-expressed with the polypeptide of the invention in cells and assayed for an autocrine response to identify potential ligand(s). As still another example, BIAcore assays, gel overlay assays, or other methods known in the art can be used to identify binding partner polypeptides, including, (1) organic and inorganic chemical libraries, (2) natural product libraries, and (3) combinatorial libraries comprised of random peptides, oligonucleotides or organic molecules.

The role of downstream intracellular signaling molecules in the signaling cascade of the polypeptide of the invention can be determined. For example, a chimeric protein in which the cytoplasmic domain of the polypeptide of the invention is fused to the extracellular portion of a protein, whose ligand has been identified, is produced in a host cell. The cell is then incubated with the ligand specific for the extracellular portion of the chimeric protein, thereby activating the chimeric receptor. Known downstream proteins involved in intracellular signaling can then be assayed for expected modifications *i.e.* phosphorylation. Other methods known to those in the art can also be used to identify signaling molecules involved in receptor activity.

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### 4.10.15 ANTI-INFLAMMATORY ACTIVITY

Compositions of the present invention may also exhibit anti-inflammatory activity. The anti-inflammatory activity may be achieved by providing a stimulus to cells involved in the inflammatory response, by inhibiting or promoting cell-cell interactions (such as, for example, cell adhesion), by inhibiting or promoting chemotaxis of cells involved in the inflammatory process, inhibiting or promoting cell extravasation, or by stimulating or suppressing production of other factors which more directly inhibit or promote an inflammatory response. Compositions with such activities can be used to treat inflammatory conditions including chronic or acute conditions), including without limitation intimation associated with infection (such as septic shock, sepsis or systemic inflammatory response syndrome (SIRS)), ischemia-reperfusion injury, endotoxin lethality, arthritis, complement-mediated hyperacute rejection, nephritis, cytokine or chemokine-induced lung injury, inflammatory bowel disease, Crohn's disease or resulting from over production of cytokines such as TNF or IL-1. Compositions of the invention may also be useful to treat anaphylaxis and hypersensitivity to an antigenic substance or material. Compositions of this invention may be utilized to prevent or treat conditions such as, but not limited to, sepsis, acute pancreatitis, endotoxin shock, cytokine induced shock, rheumatoid arthritis, chronic inflammatory arthritis, pancreatic cell damage from diabetes mellitus type 1, graft versus host disease, inflammatory bowel disease, inflamation associated with pulmonary disease, other autoimmune disease or inflammatory disease, an antiproliferative agent such as for acute or chronic mylegenous leukemia or in the prevention of premature labor secondary to intrauterine infections.

# **4.10.16 LEUKEMIAS**

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Leukemias and related disorders may be treated or prevented by administration of a

therapeutic that promotes or inhibits function of the polynucleotides and/or polypeptides of the invention. Such leukemias and related disorders include but are not limited to acute leukemia, acute lymphocytic leukemia, acute myelocytic leukemia, myeloblastic, promyelocytic, myelomonocytic, monocytic, erythroleukemia, chronic leukemia, chronic myelocytic (granulocytic) leukemia and chronic lymphocytic leukemia (for a review of such disorders, see

Fishman et al., 1985, Medicine, 2d Ed., J.B. Lippincott Co., Philadelphia).

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# 4.10.17 NERVOUS SYSTEM DISORDERS

Nervous system disorders, involving cell types which can be tested for efficacy of intervention with compounds that modulate the activity of the polynucleotides and/or polypeptides of the invention, and which can be treated upon thus observing an indication of

therapeutic utility, include but are not limited to nervous system injuries, and diseases or disorders which result in either a disconnection of axons, a diminution or degeneration of neurons, or demyelination. Nervous system lesions which may be treated in a patient (including human and non-human mammalian patients) according to the invention include but are not limited to the following lesions of either the central (including spinal cord, brain) or peripheral nervous systems:

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- (i) traumatic lesions, including lesions caused by physical injury or associated with surgery, for example, lesions which sever a portion of the nervous system, or compression injuries;
- (ii) ischemic lesions, in which a lack of oxygen in a portion of the nervous system results in neuronal injury or death, including cerebral infarction or ischemia, or spinal cord infarction or ischemia;
- (iii) infectious lesions, in which a portion of the nervous system is destroyed or injured as a result of infection, for example, by an abscess or associated with infection by human immunodeficiency virus, herpes zoster, or herpes simplex virus or with Lyme disease, tuberculosis, syphilis;
- (iv) degenerative lesions, in which a portion of the nervous system is destroyed or injured as a result of a degenerative process including but not limited to degeneration associated with Parkinson's disease, Alzheimer's disease, Huntington's chorea, or amyotrophic lateral sclerosis;
- (v) lesions associated with nutritional diseases or disorders, in which a portion of the nervous system is destroyed or injured by a nutritional disorder or disorder of metabolism including but not limited to, vitamin B12 deficiency, folic acid deficiency, Wernicke disease, tobacco-alcohol amblyopia, Marchiafava-Bignami disease (primary degeneration of the corpus callosum), and alcoholic cerebellar degeneration;
- (vi) neurological lesions associated with systemic diseases including but not limited to diabetes (diabetic neuropathy, Bell's palsy), systemic lupus erythematosus, carcinoma, or sarcoidosis;
- (vii) lesions caused by toxic substances including alcohol, lead, or particular
   neurotoxins; and
  - (viii) demyelinated lesions in which a portion of the nervous system is destroyed or injured by a demyelinating disease including but not limited to multiple sclerosis, human immunodeficiency virus-associated myelopathy, transverse myelopathy or various etiologies, progressive multifocal leukoencephalopathy, and central pontine myelinolysis.

Therapeutics which are useful according to the invention for treatment of a nervous system disorder may be selected by testing for biological activity in promoting the survival or differentiation of neurons. For example, and not by way of limitation, therapeutics which elicit any of the following effects may be useful according to the invention:

(i) increased survival time of neurons in culture;

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- (ii) increased sprouting of neurons in culture or in vivo;
- (iii) increased production of a neuron-associated molecule in culture or *in vivo*, *e.g.*, choline acetyltransferase or acetylcholinesterase with respect to motor neurons; or
  - (iv) decreased symptoms of neuron dysfunction in vivo.

Such effects may be measured by any method known in the art. In preferred, non-limiting embodiments, increased survival of neurons may be measured by the method set forth in Arakawa et al. (1990, J. Neurosci. 10:3507-3515); increased sprouting of neurons may be detected by methods set forth in Pestronk et al. (1980, Exp. Neurol. 70:65-82) or Brown et al. (1981, Ann. Rev. Neurosci. 4:17-42); increased production of neuron-associated molecules may be measured by bioassay, enzymatic assay, antibody binding, Northern blot assay, etc., depending on the molecule to be measured; and motor neuron dysfunction may be measured by assessing the physical manifestation of motor neuron disorder, e.g., weakness, motor neuron conduction velocity, or functional disability.

In specific embodiments, motor neuron disorders that may be treated according to the invention include but are not limited to disorders such as infarction, infection, exposure to toxin, trauma, surgical damage, degenerative disease or malignancy that may affect motor neurons as well as other components of the nervous system, as well as disorders that selectively affect neurons such as amyotrophic lateral sclerosis, and including but not limited to progressive spinal muscular atrophy, progressive bulbar palsy, primary lateral sclerosis, infantile and juvenile muscular atrophy, progressive bulbar paralysis of childhood (Fazio-Londe syndrome), poliomyelitis and the post polio syndrome, and Hereditary Motorsensory Neuropathy (Charcot-Marie-Tooth Disease).

# 4.10.18 OTHER ACTIVITIES

A polypeptide of the invention may also exhibit one or more of the following additional activities or effects: inhibiting the growth, infection or function of, or killing, infectious agents, including, without limitation, bacteria, viruses, fungi and other parasites; effecting (suppressing or enhancing) bodily characteristics, including, without limitation, height, weight, hair color, eye color, skin, fat to lean ratio or other tissue pigmentation, or organ or body part size or shape (such as, for example, breast augmentation or diminution, change in bone form or shape);

effecting biorhythms or circadian cycles or rhythms; effecting the fertility of male or female subjects; effecting the metabolism, catabolism, anabolism, processing, utilization, storage or elimination of dietary fat, lipid, protein, carbohydrate, vitamins, minerals, co-factors or other nutritional factors or component(s); effecting behavioral characteristics, including, without limitation, appetite, libido, stress, cognition (including cognitive disorders), depression (including depressive disorders) and violent behaviors; providing analgesic effects or other pain reducing effects; promoting differentiation and growth of embryonic stem cells in lineages other than hematopoietic lineages; hormonal or endocrine activity; in the case of enzymes, correcting deficiencies of the enzyme and treating deficiency-related diseases; treatment of hyperproliferative disorders (such as, for example, psoriasis); immunoglobulin-like activity (such as, for example, the ability to bind antigens or complement); and the ability to act as an antigen in a vaccine composition to raise an immune response against such protein or another material or entity which is cross-reactive with such protein.

# 4.10.19 IDENTIFICATION OF POLYMORPHISMS

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The demonstration of polymorphisms makes possible the identification of such polymorphisms in human subjects and the pharmacogenetic use of this information for diagnosis and treatment. Such polymorphisms may be associated with, e.g., differential predisposition or susceptibility to various disease states (such as disorders involving inflammation or immune response) or a differential response to drug administration, and this genetic information can be used to tailor preventive or therapeutic treatment appropriately. For example, the existence of a polymorphism associated with a predisposition to inflammation or autoimmune disease makes possible the diagnosis of this condition in humans by identifying the presence of the polymorphism.

Polymorphisms can be identified in a variety of ways known in the art which all generally involve obtaining a sample from a patient, analyzing DNA from the sample, optionally involving isolation or amplification of the DNA, and identifying the presence of the polymorphism in the DNA. For example, PCR may be used to amplify an appropriate fragment of genomic DNA which may then be sequenced. Alternatively, the DNA may be subjected to allele-specific oligonucleotide hybridization (in which appropriate oligonucleotides are hybridized to the DNA under conditions permitting detection of a single base mismatch) or to a single nucleotide extension assay (in which an oligonucleotide that hybridizes immediately adjacent to the position of the polymorphism is extended with one or more labeled nucleotides). In addition, traditional restriction fragment length polymorphism analysis (using restriction enzymes that provide differential digestion of the genomic DNA depending on the presence or

absence of the polymorphism) may be performed. Arrays with nucleotide sequences of the present invention can be used to detect polymorphisms. The array can comprise modified nucleotide sequences of the present invention in order to detect the nucleotide sequences of the present invention. In the alternative, any one of the nucleotide sequences of the present invention can be placed on the array to detect changes from those sequences.

Alternatively a polymorphism resulting in a change in the amino acid sequence could also be detected by detecting a corresponding change in amino acid sequence of the protein, e.g., by an antibody specific to the variant sequence.

#### 4.10.20 ARTHRITIS AND INFLAMMATION

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The immunosuppressive effects of the compositions of the invention against rheumatoid arthritis is determined in an experimental animal model system. The experimental model system is adjuvant induced arthritis in rats, and the protocol is described by J. Holoshitz, et at., 1983, Science, 219:56, or by B. Waksman et al., 1963, Int. Arch. Allergy Appl. Immunol., 23:129. Induction of the disease can be caused by a single injection, generally intradermally, of a suspension of killed Mycobacterium tuberculosis in complete Freund's adjuvant (CFA). The route of injection can vary, but rats may be injected at the base of the tail with an adjuvant mixture. The polypeptide is administered in phosphate buffered solution (PBS) at a dose of about 1-5 mg/kg. The control consists of administering PBS only.

The procedure for testing the effects of the test compound would consist of intradermally injecting killed Mycobacterium tuberculosis in CFA followed by immediately administering the test compound and subsequent treatment every other day until day 24. At 14, 15, 18, 20, 22, and 24 days after injection of Mycobacterium CFA, an overall arthritis score may be obtained as described by J. Holoskitz above. An analysis of the data would reveal that the test compound would have a dramatic affect on the swelling of the joints as measured by a decrease of the arthritis score.

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#### 4.11 THERAPEUTIC METHODS

The compositions (including polypeptide fragments, analogs, variants and antibodies or other binding partners or modulators including antisense polynucleotides) of the invention have numerous applications in a variety of therapeutic methods. Examples of therapeutic applications include, but are not limited to, those exemplified herein.

# 4.11.1 EXAMPLE

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One embodiment of the invention is the administration of an effective amount of the polypeptides or other composition of the invention to individuals affected by a disease or disorder that can be modulated by regulating the peptides of the invention. While the mode of administration is not particularly important, parenteral administration is preferred. An exemplary mode of administration is to deliver an intravenous bolus. The dosage of the polypeptides or other composition of the invention will normally be determined by the prescribing physician. It is to be expected that the dosage will vary according to the age, weight, condition and response of the individual patient. Typically, the amount of polypeptide administered per dose will be in the range of about 0.01µg/kg to 100 mg/kg of body weight, with the preferred dose being about 0.1µg/kg to 10 mg/kg of patient body weight. For parenteral administration, polypeptides of the invention will be formulated in an injectable form combined with a pharmaceutically acceptable parenteral vehicle. Such vehicles are well known in the art and examples include water, saline, Ringer's solution, dextrose solution, and solutions consisting of small amounts of the human serum albumin. The vehicle may contain minor amounts of additives that maintain the isotonicity and stability of the polypeptide or other active ingredient. The preparation of such solutions is within the skill of the art.

# 4.12 PHARMACEUTICAL FORMULATIONS AND ROUTES OF ADMINISTRATION

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A protein or other composition of the present invention (from whatever source derived, including without limitation from recombinant and non-recombinant sources and including antibodies and other binding partners of the polypeptides of the invention) may be administered to a patient in need, by itself, or in pharmaceutical compositions where it is mixed with suitable carriers or excipient(s) at doses to treat or ameliorate a variety of disorders. Such a composition may optionally contain (in addition to protein or other active ingredient and a carrier) diluents, fillers, salts, buffers, stabilizers, solubilizers, and other materials well known in the art. The term "pharmaceutically acceptable" means a non-toxic material that does not interfere with the effectiveness of the biological activity of the active ingredient(s). The characteristics of the carrier will depend on the route of administration. The pharmaceutical composition of the invention may also contain cytokines, lymphokines, or other hematopoietic factors such as M-CSF, GM-CSF, TNF, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IFN, TNF0, TNF1, TNF2, G-CSF, Meg-CSF, thrombopoietin, stem cell factor, and erythropoietin. In further compositions, proteins of the invention may be combined with other agents beneficial to the treatment of the disease or disorder in question. These agents include various growth factors such as epidermal growth factor (EGF), platelet-derived growth

factor (PDGF), transforming growth factors (TGF- $\alpha$  and TGF- $\beta$ ), insulin-like growth factor (IGF), as well as cytokines described herein.

The pharmaceutical composition may further contain other agents which either enhance the activity of the protein or other active ingredient or complement its activity or use in treatment. Such additional factors and/or agents may be included in the pharmaceutical composition to produce a synergistic effect with protein or other active ingredient of the invention, or to minimize side effects. Conversely, protein or other active ingredient of the present invention may be included in formulations of the particular clotting factor, cytokine, lymphokine, other hematopoietic factor, thrombolytic or anti-thrombotic factor, or anti-inflammatory agent to minimize side effects of the clotting factor, cytokine, lymphokine, other hematopoietic factor, thrombolytic or anti-thrombotic factor, or anti-inflammatory agent (such as IL-1Ra, IL-1 Hy1, IL-1 Hy2, anti-TNF, corticosteroids, immunosuppressive agents). A protein of the present invention may be active in multimers (e.g., heterodimers or homodimers) or complexes with itself or other proteins. As a result, pharmaceutical compositions of the invention may comprise a protein of the invention in such multimeric or complexed form.

As an alternative to being included in a pharmaceutical composition of the invention including a first protein, a second protein or a therapeutic agent may be concurrently administered with the first protein (e.g., at the same time, or at differing times provided that therapeutic concentrations of the combination of agents is achieved at the treatment site). Techniques for formulation and administration of the compounds of the instant application may be found in "Remington's Pharmaceutical Sciences," Mack Publishing Co., Easton, PA, latest edition. A therapeutically effective dose further refers to that amount of the compound sufficient to result in amelioration of symptoms, e.g., treatment, healing, prevention or amelioration of the relevant medical condition, or an increase in rate of treatment, healing, prevention or amelioration of such conditions. When applied to an individual active ingredient, administered alone, a therapeutically effective dose refers to that ingredient alone. When applied to a combination, a therapeutically effective dose refers to combined amounts of the active ingredients that result in the therapeutic effect, whether administered in combination, serially or simultaneously.

In practicing the method of treatment or use of the present invention, a therapeutically effective amount of protein or other active ingredient of the present invention is administered to a mammal having a condition to be treated. Protein or other active ingredient of the present invention may be administered in accordance with the method of the invention either alone or in combination with other therapies such as treatments employing cytokines, lymphokines or other hematopoietic factors. When co- administered with one or more cytokines, lymphokines or other

hematopoietic factors, protein or other active ingredient of the present invention may be administered either simultaneously with the cytokine(s), lymphokine(s), other hematopoietic factor(s), thrombolytic or anti-thrombotic factors, or sequentially. If administered sequentially, the attending physician will decide on the appropriate sequence of administering protein or other active ingredient of the present invention in combination with cytokine(s), lymphokine(s), other hematopoietic factor(s), thrombolytic or anti-thrombotic factors.

# 4.12.1 ROUTES OF ADMINISTRATION

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Suitable routes of administration may, for example, include oral, rectal, transmucosal, or intestinal administration; parenteral delivery, including intramuscular, subcutaneous, intramedullary injections, as well as intrathecal, direct intraventricular, intravenous, intraperitoneal, intranasal, or intraocular injections. Administration of protein or other active ingredient of the present invention used in the pharmaceutical composition or to practice the method of the present invention can be carried out in a variety of conventional ways, such as oral ingestion, inhalation, topical application or cutaneous, subcutaneous, intraperitoneal, parenteral or intravenous injection. Intravenous administration to the patient is preferred.

Alternately, one may administer the compound in a local rather than systemic manner, for example, via injection of the compound directly into a arthritic joints or in fibrotic tissue, often in a depot or sustained release formulation. In order to prevent the scarring process frequently occurring as complication of glaucoma surgery, the compounds may be administered topically, for example, as eye drops. Furthermore, one may administer the drug in a targeted drug delivery system, for example, in a liposome coated with a specific antibody, targeting, for example, arthritic or fibrotic tissue. The liposomes will be targeted to and taken up selectively by the afflicted tissue.

The polypeptides of the invention are administered by any route that delivers an effective dosage to the desired site of action. The determination of a suitable route of administration and an effective dosage for a particular indication is within the level of skill in the art. Preferably for wound treatment, one administers the therapeutic compound directly to the site. Suitable dosage ranges for the polypeptides of the invention can be extrapolated from these dosages or from similar studies in appropriate animal models. Dosages can then be adjusted as necessary by the clinician to provide maximal therapeutic benefit.

# 4.12.2 COMPOSITIONS/FORMULATIONS

Pharmaceutical compositions for use in accordance with the present invention thus may be formulated in a conventional manner using one or more physiologically acceptable carriers

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comprising excipients and auxiliaries which facilitate processing of the active compounds into preparations which can be used pharmaceutically. These pharmaceutical compositions may be manufactured in a manner that is itself known, e.g., by means of conventional mixing, dissolving, granulating, dragee-making, levigating, emulsifying, encapsulating, entrapping or lyophilizing processes. Proper formulation is dependent upon the route of administration chosen. When a therapeutically effective amount of protein or other active ingredient of the present invention is administered orally, protein or other active ingredient of the present invention will be in the form of a tablet, capsule, powder, solution or elixir. When administered in tablet form, the pharmaceutical composition of the invention may additionally contain a solid carrier such as a gelatin or an adjuvant. The tablet, capsule, and powder contain from about 5 to 95% protein or other active ingredient of the present invention, and preferably from about 25 to 90% protein or other active ingredient of the present invention. When administered in liquid form, a liquid carrier such as water, petroleum, oils of animal or plant origin such as peanut oil, mineral oil, soybean oil, or sesame oil, or synthetic oils may be added. The liquid form of the pharmaceutical composition may further contain physiological saline solution, dextrose or other saccharide solution, or glycols such as ethylene glycol, propylene glycol or polyethylene glycol. When administered in liquid form, the pharmaceutical composition contains from about 0.5 to 90% by weight of protein or other active ingredient of the present invention, and preferably from about 1 to 50% protein or other active ingredient of the present invention.

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When a therapeutically effective amount of protein or other active ingredient of the present invention is administered by intravenous, cutaneous or subcutaneous injection, protein or other active ingredient of the present invention will be in the form of a pyrogen-free, parenterally acceptable aqueous solution. The preparation of such parenterally acceptable protein or other active ingredient solutions, having due regard to pH, isotonicity, stability, and the like, is within the skill in the art. A preferred pharmaceutical composition for intravenous, cutaneous, or subcutaneous injection should contain, in addition to protein or other active ingredient of the present invention, an isotonic vehicle such as Sodium Chloride Injection, Ringer's Injection, Dextrose Injection, Dextrose and Sodium Chloride Injection, Lactated Ringer's Injection, or other vehicle as known in the art. The pharmaceutical composition of the present invention may also contain stabilizers, preservatives, buffers, antioxidants, or other additives known to those of skill in the art. For injection, the agents of the invention may be formulated in aqueous solutions, preferably in physiologically compatible buffers such as Hanks's solution, Ringer's solution, or physiological saline buffer. For transmucosal administration, penetrants appropriate to the barrier to be permeated are used in the formulation. Such penetrants are generally known in the art.

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For oral administration, the compounds can be formulated readily by combining the active compounds with pharmaceutically acceptable carriers well known in the art. Such carriers enable the compounds of the invention to be formulated as tablets, pills, dragees, capsules, liquids, gels, syrups, slurries, suspensions and the like, for oral ingestion by a patient to be treated. Pharmaceutical preparations for oral use can be obtained from a solid excipient, optionally grinding a resulting mixture, and processing the mixture of granules, after adding suitable auxiliaries, if desired, to obtain tablets or dragee cores. Suitable excipients are, in particular, fillers such as sugars, including lactose, sucrose, mannitol, or sorbitol; cellulose preparations such as, for example, maize starch, wheat starch, rice starch, potato starch, gelatin, gum tragacanth, methyl cellulose, hydroxypropylmethyl-cellulose, sodium carboxymethylcellulose, and/or polyvinylpyrrolidone (PVP). If desired, disintegrating agents may be added, such as the cross-linked polyvinyl pyrrolidone, agar, or alginic acid or a salt thereof such as sodium alginate. Dragee cores are provided with suitable coatings. For this purpose, concentrated sugar solutions may be used, which may optionally contain gum arabic, tale, polyvinyl pyrrolidone, carbopol gel, polyethylene glycol, and/or titanium dioxide, lacquer solutions, and suitable organic solvents or solvent mixtures. Dyestuffs or pigments may be added to the tablets or dragee coatings for identification or to characterize different combinations of active compound doses.

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Pharmaceutical preparations which can be used orally include push-fit capsules made of gelatin, as well as soft, sealed capsules made of gelatin and a plasticizer, such as glycerol or sorbitol. The push-fit capsules can contain the active ingredients in admixture with filler such as lactose, binders such as starches, and/or lubricants such as talc or magnesium stearate and, optionally, stabilizers. In soft capsules, the active compounds may be dissolved or suspended in suitable liquids, such as fatty oils, liquid paraffin, or liquid polyethylene glycols. In addition, stabilizers may be added. All formulations for oral administration should be in dosages suitable for such administration. For buccal administration, the compositions may take the form of tablets or lozenges formulated in conventional manner.

For administration by inhalation, the compounds for use according to the present invention are conveniently delivered in the form of an aerosol spray presentation from pressurized packs or a nebuliser, with the use of a suitable propellant, e.g., dichlorodifluoromethane, trichlorofluoromethane, dichlorotetrafluoroethane, carbon dioxide or other suitable gas. In the case of a pressurized aerosol the dosage unit may be determined by providing a valve to deliver a metered amount. Capsules and cartridges of, e.g., gelatin for use in an inhaler or insufflator may be formulated containing a powder mix of the compound and a suitable powder base such as lactose or starch. The compounds may be formulated for parenteral

administration by injection, *e.g.*, by bolus injection or continuous infusion. Formulations for injection may be presented in unit dosage form, *e.g.*, in ampules or in multi-dose containers, with an added preservative. The compositions may take such forms as suspensions, solutions or emulsions in oily or aqueous vehicles, and may contain formulatory agents such as suspending, stabilizing and/or dispersing agents.

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Pharmaceutical formulations for parenteral administration include aqueous solutions of the active compounds in water-soluble form. Additionally, suspensions of the active compounds may be prepared as appropriate oily injection suspensions. Suitable lipophilic solvents or vehicles include fatty oils such as sesame oil, or synthetic fatty acid esters, such as ethyl oleate or triglycerides, or liposomes. Aqueous injection suspensions may contain substances which increase the viscosity of the suspension, such as sodium carboxymethyl cellulose, sorbitol, or dextran. Optionally, the suspension may also contain suitable stabilizers or agents which increase the solubility of the compounds to allow for the preparation of highly concentrated solutions. Alternatively, the active ingredient may be in powder form for constitution with a suitable vehicle, e.g., sterile pyrogen-free water, before use.

The compounds may also be formulated in rectal compositions such as suppositories or retention enemas, e.g., containing conventional suppository bases such as cocoa butter or other glycerides. In addition to the formulations described previously, the compounds may also be formulated as a depot preparation. Such long acting formulations may be administered by implantation (for example subcutaneously or intramuscularly) or by intramuscular injection. Thus, for example, the compounds may be formulated with suitable polymeric or hydrophobic materials (for example as an emulsion in an acceptable oil) or ion exchange resins, or as sparingly soluble derivatives, for example, as a sparingly soluble salt.

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A pharmaceutical carrier for the hydrophobic compounds of the invention is a co-solvent system comprising benzyl alcohol, a nonpolar surfactant, a water-miscible organic polymer, and an aqueous phase. The co-solvent system may be the VPD co-solvent system. VPD is a solution of 3% w/v benzyl alcohol, 8% w/v of the nonpolar surfactant polysorbate 80, and 65% w/v polyethylene glycol 300, made up to volume in absolute ethanol. The VPD co-solvent system (VPD:5W) consists of VPD diluted 1:1 with a 5% dextrose in water solution. This co-solvent system dissolves hydrophobic compounds well, and itself produces low toxicity upon systemic administration. Naturally, the proportions of a co-solvent system may be varied considerably without destroying its solubility and toxicity characteristics. Furthermore, the identity of the co-solvent components may be varied: for example, other low-toxicity nonpolar surfactants may be used instead of polysorbate 80; the fraction size of polyethylene glycol may be varied; other biocompatible polymers may replace polyethylene glycol, *e.g.* polyvinyl pyrrolidone; and other

sugars or polysaccharides may substitute for dextrose. Alternatively, other delivery systems for hydrophobic pharmaceutical compounds may be employed. Liposomes and emulsions are well known examples of delivery vehicles or carriers for hydrophobic drugs. Certain organic solvents such as dimethylsulfoxide also may be employed, although usually at the cost of greater toxicity. Additionally, the compounds may be delivered using a sustained-release system, such as semipermeable matrices of solid hydrophobic polymers containing the therapeutic agent. Various types of sustained-release materials have been established and are well known by those skilled in the art. Sustained-release capsules may, depending on their chemical nature, release the compounds for a few weeks up to over 100 days. Depending on the chemical nature and the biological stability of the therapeutic reagent, additional strategies for protein or other active ingredient stabilization may be employed.

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The pharmaceutical compositions also may comprise suitable solid or gel phase carriers or excipients. Examples of such carriers or excipients include but are not limited to calcium carbonate, calcium phosphate, various sugars, starches, cellulose derivatives, gelatin, and polymers such as polyethylene glycols. Many of the active ingredients of the invention may be provided as salts with pharmaceutically compatible counter ions. Such pharmaceutically acceptable base addition salts are those salts which retain the biological effectiveness and properties of the free acids and which are obtained by reaction with inorganic or organic bases such as sodium hydroxide, magnesium hydroxide, ammonia, trialkylamine, dialkylamine, monoalkylamine, dibasic amino acids, sodium acetate, potassium benzoate, triethanol amine and the like.

The pharmaceutical composition of the invention may be in the form of a complex of the protein(s) or other active ingredient(s) of present invention along with protein or peptide antigens. The protein and/or peptide antigen will deliver a stimulatory signal to both B and T lymphocytes. B lymphocytes will respond to antigen through their surface immunoglobulin receptor. T lymphocytes will respond to antigen through the T cell receptor (TCR) following presentation of the antigen by MHC proteins. MHC and structurally related proteins including those encoded by class I and class II MHC genes on host cells will serve to present the peptide antigen(s) to T lymphocytes. The antigen components could also be supplied as purified MHC-peptide complexes alone or with co-stimulatory molecules that can directly signal T cells. Alternatively antibodies able to bind surface immunoglobulin and other molecules on B cells as well as antibodies able to bind the TCR and other molecules on T cells can be combined with the pharmaceutical composition of the invention.

The pharmaceutical composition of the invention may be in the form of a liposome in which protein of the present invention is combined, in addition to other pharmaceutically

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acceptable carriers, with amphipathic agents such as lipids which exist in aggregated form as micelles, insoluble monolayers, liquid crystals, or lamellar layers in aqueous solution. Suitable lipids for liposomal formulation include, without limitation, monoglycerides, diglycerides, sulfatides, lysolecithins, phospholipids, saponin, bile acids, and the like. Preparation of such liposomal formulations is within the level of skill in the art, as disclosed, for example, in U.S. Patent Nos. 4,235,871; 4,501,728; 4,837,028; and 4,737,323, all of which are incorporated herein by reference.

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The amount of protein or other active ingredient of the present invention in the pharmaceutical composition of the present invention will depend upon the nature and severity of the condition being treated, and on the nature of prior treatments which the patient has undergone. Ultimately, the attending physician will decide the amount of protein or other active ingredient of the present invention with which to treat each individual patient. Initially, the attending physician will administer low doses of protein or other active ingredient of the present invention and observe the patient's response. Larger doses of protein or other active ingredient of the present invention may be administered until the optimal therapeutic effect is obtained for the patient, and at that point the dosage is not increased further. It is contemplated that the various pharmaceutical compositions used to practice the method of the present invention should contain about 0.01 µg to about 100 mg (preferably about 0.1 µg to about 10 mg, more preferably about 0.1 µg to about 1 mg) of protein or other active ingredient of the present invention per kg body weight. For compositions of the present invention which are useful for bone, cartilage, tendon or ligament regeneration, the therapeutic method includes administering the composition topically, systematically, or locally as an implant or device. When administered, the therapeutic composition for use in this invention is, of course, in a pyrogen-free, physiologically acceptable form. Further, the composition may desirably be encapsulated or injected in a viscous form for delivery to the site of bone, cartilage or tissue damage. Topical administration may be suitable for wound healing and tissue repair. Therapeutically useful agents other than a protein or other active ingredient of the invention which may also optionally be included in the composition as described above, may alternatively or additionally, be administered simultaneously or sequentially with the composition in the methods of the invention. Preferably for bone and/or cartilage formation, the composition would include a matrix capable of delivering the protein-containing or other active ingredient-containing composition to the site of bone and/or cartilage damage, providing a structure for the developing bone and cartilage and optimally capable of being resorbed into the body. Such matrices may be formed of materials presently in use for other implanted medical applications.

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The choice of matrix material is based on biocompatibility, biodegradability, mechanical properties, cosmetic appearance and interface properties. The particular application of the compositions will define the appropriate formulation. Potential matrices for the compositions may be biodegradable and chemically defined calcium sulfate, tricalcium phosphate, hydroxyapatite, polylactic acid, polyglycolic acid and polyanhydrides. Other potential materials are biodegradable and biologically well-defined, such as bone or dermal collagen. Further matrices are comprised of pure proteins or extracellular matrix components. Other potential matrices are nonbiodegradable and chemically defined, such as sintered hydroxyapatite, bioglass, aluminates, or other ceramics. Matrices may be comprised of combinations of any of the above mentioned types of material, such as polylactic acid and hydroxyapatite or collagen and tricalcium phosphate. The bioceramics may be altered in composition, such as in calcium-aluminate-phosphate and processing to alter pore size, particle size, particle shape, and biodegradability. Presently preferred is a 50:50 (mole weight) copolymer of lactic acid and glycolic acid in the form of porous particles having diameters ranging from 150 to 800 microns. In some applications, it will be useful to utilize a sequestering agent, such as carboxymethyl cellulose or autologous blood clot, to prevent the protein compositions from disassociating from the matrix.

A preferred family of sequestering agents is cellulosic materials such as alkylcelluloses (including hydroxyalkylcelluloses), including methylcellulose, ethylcellulose, hydroxyethylcellulose, hydroxypropylcellulose, hydroxypropyl-methylcellulose, and carboxymethylcellulose, the most preferred being cationic salts of carboxymethylcellulose (CMC). Other preferred sequestering agents include hyaluronic acid, sodium alginate, poly(ethylene glycol), polyoxyethylene oxide, carboxyvinyl polymer and poly(vinyl alcohol). The amount of sequestering agent useful herein is 0.5-20 wt %, preferably 1-10 wt % based on total formulation weight, which represents the amount necessary to prevent desorption of the protein from the polymer matrix and to provide appropriate handling of the composition, yet not so much that the progenitor cells are prevented from infiltrating the matrix, thereby providing the protein the opportunity to assist the osteogenic activity of the progenitor cells. In further compositions, proteins or other active ingredients of the invention may be combined with other agents beneficial to the treatment of the bone and/or cartilage defect, wound, or tissue in question. These agents include various growth factors such as epidermal growth factor (EGF), platelet derived growth factor (PDGF), transforming growth factors (TGF-α and TGF-β), and insulin-like growth factor (IGF).

The therapeutic compositions are also presently valuable for veterinary applications. Particularly domestic animals and thoroughbred horses, in addition to humans, are desired

patients for such treatment with proteins or other active ingredients of the present invention. The dosage regimen of a protein-containing pharmaceutical composition to be used in tissue regeneration will be determined by the attending physician considering various factors which modify the action of the proteins, e.g., amount of tissue weight desired to be formed, the site of damage, the condition of the damaged tissue, the size of a wound, type of damaged tissue (e.g., bone), the patient's age, sex, and diet, the severity of any infection, time of administration and other clinical factors. The dosage may vary with the type of matrix used in the reconstitution and with inclusion of other proteins in the pharmaceutical composition. For example, the addition of other known growth factors, such as IGF I (insulin like growth factor I), to the final composition, may also effect the dosage. Progress can be monitored by periodic assessment of tissue/bone growth and/or repair, for example, X-rays, histomorphometric determinations and tetracycline labeling.

Polynucleotides of the present invention can also be used for gene therapy. Such polynucleotides can be introduced either in vivo or ex vivo into cells for expression in a mammalian subject. Polynucleotides of the invention may also be administered by other known methods for introduction of nucleic acid into a cell or organism (including, without limitation, in the form of viral vectors or naked DNA). Cells may also be cultured ex vivo in the presence of proteins of the present invention in order to proliferate or to produce a desired effect on or activity in such cells. Treated cells can then be introduced in vivo for therapeutic purposes.

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# 4.12.3 EFFECTIVE DOSAGE

Pharmaceutical compositions suitable for use in the present invention include compositions wherein the active ingredients are contained in an effective amount to achieve its intended purpose. More specifically, a therapeutically effective amount means an amount effective to prevent development of or to alleviate the existing symptoms of the subject being treated. Determination of the effective amount is well within the capability of those skilled in the art, especially in light of the detailed disclosure provided herein. For any compound used in the method of the invention, the therapeutically effective dose can be estimated initially from appropriate in vitro assays. For example, a dose can be formulated in animal models to achieve a circulating concentration range that can be used to more accurately determine useful doses in humans. For example, a dose can be formulated in animal models to achieve a circulating concentration range that includes the IC<sub>50</sub> as determined in cell culture (*i.e.*, the concentration of the test compound which achieves a half-maximal inhibition of the protein's biological activity). Such information can be used to more accurately determine useful doses in humans.

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A therapeutically effective dose refers to that amount of the compound that results in amelioration of symptoms or a prolongation of survival in a patient. Toxicity and therapeutic efficacy of such compounds can be determined by standard pharmaceutical procedures in cell cultures or experimental animals, e.g., for determining the LD<sub>50</sub> (the dose lethal to 50% of the population) and the ED<sub>50</sub> (the dose therapeutically effective in 50% of the population). The dose ratio between toxic and therapeutic effects is the therapeutic index and it can be expressed as the ratio between LD<sub>50</sub> and ED<sub>50</sub>. Compounds which exhibit high therapeutic indices are preferred. The data obtained from these cell culture assays and animal studies can be used in formulating a range of dosage for use in human. The dosage of such compounds lies preferably within a range of circulating concentrations that include the ED<sub>50</sub> with little or no toxicity. The dosage may vary within this range depending upon the dosage form employed and the route of administration utilized. The exact formulation, route of administration and dosage can be chosen by the individual physician in view of the patient's condition. See, e.g., Fingl et al., 1975, in "The Pharmacological Basis of Therapeutics", Ch. 1 p.1. Dosage amount and interval may be adjusted individually to provide plasma levels of the active moiety which are sufficient to maintain the desired effects, or minimal effective concentration (MEC). The MEC will vary for each compound but can be estimated from in vitro data. Dosages necessary to achieve the MEC will depend on individual characteristics and route of administration. However, HPLC assays or bioassays can be used to determine plasma concentrations.

Dosage intervals can also be determined using MEC value. Compounds should be administered using a regimen which maintains plasma levels above the MEC for 10-90% of the time, preferably between 30-90% and most preferably between 50-90%. In cases of local administration or selective uptake, the effective local concentration of the drug may not be related to plasma concentration.

An exemplary dosage regimen for polypeptides or other compositions of the invention will be in the range of about  $0.01~\mu g/kg$  to 100~mg/kg of body weight daily, with the preferred dose being about  $0.1~\mu g/kg$  to 25~mg/kg of patient body weight daily, varying in adults and children. Dosing may be once daily, or equivalent doses may be delivered at longer or shorter intervals.

The amount of composition administered will, of course, be dependent on the subject being treated, on the subject's age and weight, the severity of the affliction, the manner of administration and the judgment of the prescribing physician.

## 4.12.4 PACKAGING

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The compositions may, if desired, be presented in a pack or dispenser device which may contain one or more unit dosage forms containing the active ingredient. The pack may, for example, comprise metal or plastic foil, such as a blister pack. The pack or dispenser device may be accompanied by instructions for administration. Compositions comprising a compound of the invention formulated in a compatible pharmaceutical carrier may also be prepared, placed in an appropriate container, and labeled for treatment of an indicated condition.

#### 4.13 ANTIBODIES

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Also included in the invention are antibodies to proteins, or fragments of proteins of the invention. The term "antibody" as used herein refers to immunoglobulin molecules and immunologically active portions of immunoglobulin (Ig) molecules, *i.e.*, molecules that contain an antigen binding site that specifically binds (immunoreacts with) an antigen. Such antibodies include, but are not limited to, polyclonal, monoclonal, chimeric, single chain,  $F_{ab}$ , and  $F_{(ab)}$  fragments, and an  $F_{ab}$  expression library. In general, an antibody molecule obtained from humans relates to any of the classes IgG, IgM, IgA, IgE and IgD, which differ from one another by the nature of the heavy chain present in the molecule. Certain classes have subclasses as well, such as  $IgG_1$ ,  $IgG_2$ , and others. Furthermore, in humans, the light chain may be a kappa chain or a lambda chain. Reference herein to antibodies includes a reference to all such classes, subclasses and types of human antibody species.

An isolated related protein of the invention may be intended to serve as an antigen, or a portion or fragment thereof, and additionally can be used as an immunogen to generate antibodies that immunospecifically bind the antigen, using standard techniques for polyclonal and monoclonal antibody preparation. The full-length protein can be used or, alternatively, the invention provides antigenic peptide fragments of the antigen for use as immunogens. An antigenic peptide fragment comprises at least 6 amino acid residues of the amino acid sequence of the full length protein, (for example the amino acid sequence shown in SEQ ID NO: 1010), and encompasses an epitope thereof such that an antibody raised against the peptide forms a specific immune complex with the full length protein or with any fragment that contains the epitope. Preferably, the antigenic peptide comprises at least 10 amino acid residues, or at least 15 amino acid residues, or at least 20 amino acid residues. Preferred epitopes encompassed by the antigenic peptide are regions of the protein that are located on its surface; commonly these are hydrophilic regions.

In certain embodiments of the invention, at least one epitope encompassed by the antigenic peptide is a region of -related protein that is located on the surface of the protein, e.g., a hydrophilic region. A hydrophobicity analysis of the human related protein sequence will

indicate which regions of a related protein are particularly hydrophilic and, therefore, are likely to encode surface residues useful for targeting antibody production. As a means for targeting antibody production, hydropathy plots showing regions of hydrophilicity and hydrophobicity may be generated by any method well known in the art, including, for example, the Kyte Doolittle or the Hopp Woods methods, either with or without Fourier transformation. See, *e.g.*, Hopp and Woods, 1981, *Proc. Nat. Acad. Sci. USA* 78: 3824-3828; Kyte and Doolittle 1982, *J. Mol. Biol.* 157: 105-142, each of which is incorporated herein by reference in its entirety. Antibodies that are specific for one or more domains within an antigenic protein, or derivatives, fragments, analogs or homologs thereof, are also provided herein.

A protein of the invention, or a derivative, fragment, analog, homolog or ortholog thereof, may be utilized as an immunogen in the generation of antibodies that immunospecifically bind these protein components.

Various procedures known within the art may be used for the production of polyclonal or monoclonal antibodies directed against a protein of the invention, or against derivatives, fragments, analogs homologs or orthologs thereof (see, for example, Antibodies: A Laboratory Manual, Harlow E, and Lane D, 1988, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, incorporated herein by reference). Some of these antibodies are discussed below.

## **5.13.1 Polyclonal Antibodies**

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For the production of polyclonal antibodies, various suitable host animals (e.g., rabbit, goat, mouse or other mammal) may be immunized by one or more injections with the native protein, a synthetic variant thereof, or a derivative of the foregoing. An appropriate immunogenic preparation can contain, for example, the naturally occurring immunogenic protein, a chemically synthesized polypeptide representing the immunogenic protein, or a recombinantly expressed immunogenic protein. Furthermore, the protein may be conjugated to a second protein known to be immunogenic in the mammal being immunized. Examples of such immunogenic proteins include but are not limited to keyhole limpet hemocyanin, serum albumin, bovine thyroglobulin, and soybean trypsin inhibitor. The preparation can further include an adjuvant. Various adjuvants used to increase the immunological response include, but are not limited to, Freund's (complete and incomplete), mineral gels (e.g., aluminum hydroxide), surface active substances (e.g., lysolecithin, pluronic polyols, polyanions, peptides, oil emulsions, dinitrophenol, etc.), adjuvants usable in humans such as Bacille Calmette-Guerin and Corynebacterium parvum, or similar immunostimulatory agents. Additional examples of adjuvants which can be employed include MPL-TDM adjuvant (monophosphoryl Lipid A, synthetic trehalose dicorynomycolate).

The polyclonal antibody molecules directed against the immunogenic protein can be isolated from the mammal (e.g., from the blood) and further purified by well known techniques, such as affinity chromatography using protein A or protein G, which provide primarily the IgG fraction of immune serum. Subsequently, or alternatively, the specific antigen which is the target of the immunoglobulin sought, or an epitope thereof, may be immobilized on a column to purify the immune specific antibody by immunoaffinity chromatography. Purification of immunoglobulins is discussed, for example, by D. Wilkinson (The Scientist, published by The Scientist, Inc., Philadelphia PA, Vol. 14, No. 8 (April 17, 2000), pp. 25-28).

#### 5.13.2 Monoclonal Antibodies

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The term "monoclonal antibody" (MAb) or "monoclonal antibody composition", as used herein, refers to a population of antibody molecules that contain only one molecular species of antibody molecule consisting of a unique light chain gene product and a unique heavy chain gene product. In particular, the complementarity determining regions (CDRs) of the monoclonal antibody are identical in all the molecules of the population. MAbs thus contain an antigen binding site capable of immunoreacting with a particular epitope of the antigen characterized by a unique binding affinity for it.

Monoclonal antibodies can be prepared using hybridoma methods, such as those described by Kohler and Milstein, Nature, 256:495 (1975). In a hybridoma method, a mouse, hamster, or other appropriate host animal, is typically immunized with an immunizing agent to elicit lymphocytes that produce or are capable of producing antibodies that will specifically bind to the immunizing agent. Alternatively, the lymphocytes can be immunized in vitro.

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The immunizing agent will typically include the protein antigen, a fragment thereof or a fusion protein thereof. Generally, either peripheral blood lymphocytes are used if cells of human origin are desired, or spleen cells or lymph node cells are used if non-human mammalian sources are desired. The lymphocytes are then fused with an immortalized cell line using a suitable fusing agent, such as polyethylene glycol, to form a hybridoma cell (Goding, Monoclonal Antibodies: Principles and Practice, Academic Press, (1986) pp. 59-103). Immortalized cell lines are usually transformed mammalian cells, particularly myeloma cells of rodent, bovine and human origin. Usually, rat or mouse myeloma cell lines are employed. The hybridoma cells can be cultured in a suitable culture medium that preferably contains one or more substances that inhibit the growth or survival of the unfused, immortalized cells. For example, if the parental cells lack the enzyme hypoxanthine guanine phosphoribosyl transferase (HGPRT or HPRT), the culture medium for the hybridomas typically will include hypoxanthine, aminopterin, and thymidine ("HAT medium"), which substances prevent the growth of HGPRT-deficient cells.

Preferred immortalized cell lines are those that fuse efficiently, support stable high level expression of antibody by the selected antibody-producing cells, and are sensitive to a medium such as HAT medium. More preferred immortalized cell lines are murine myeloma lines, which can be obtained, for instance, from the Salk Institute Cell Distribution Center, San Diego, California and the American Type Culture Collection, Manassas, Virginia. Human myeloma and mouse-human heteromyeloma cell lines also have been described for the production of human monoclonal antibodies (Kozbor, <u>J. Immunol., 133</u>:3001 (1984); Brodeur et al., <u>Monoclonal Antibody Production Techniques and Applications</u>, Marcel Dekker, Inc., New York, (1987) pp. 51-63).

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The culture medium in which the hybridoma cells are cultured can then be assayed for the presence of monoclonal antibodies directed against the antigen. Preferably, the binding specificity of monoclonal antibodies produced by the hybridoma cells is determined by immunoprecipitation or by an in vitro binding assay, such as radioimmunoassay (RIA) or enzyme-linked immunoabsorbent assay (ELISA). Such techniques and assays are known in the art. The binding affinity of the monoclonal antibody can, for example, be determined by the Scatchard analysis of Munson and Pollard, <u>Anal. Biochem.</u>, <u>107</u>:220 (1980). Preferably, antibodies having a high degree of specificity and a high binding affinity for the target antigen are isolated.

After the desired hybridoma cells are identified, the clones can be subcloned by limiting dilution procedures and grown by standard methods. Suitable culture media for this purpose include, for example, Dulbecco's Modified Eagle's Medium and RPMI-1640 medium.

Alternatively, the hybridoma cells can be grown in vivo as ascites in a mammal.

The monoclonal antibodies secreted by the subclones can be isolated or purified from the culture medium or ascites fluid by conventional immunoglobulin purification procedures such as, for example, protein A-Sepharose, hydroxylapatite chromatography, gel electrophoresis, dialysis, or affinity chromatography.

The monoclonal antibodies can also be made by recombinant DNA methods, such as those described in U.S. Patent No. 4,816,567. DNA encoding the monoclonal antibodies of the invention can be readily isolated and sequenced using conventional procedures (e.g., by using oligonucleotide probes that are capable of binding specifically to genes encoding the heavy and light chains of murine antibodies). The hybridoma cells of the invention serve as a preferred source of such DNA. Once isolated, the DNA can be placed into expression vectors, which are then transfected into host cells such as simian COS cells, Chinese hamster ovary (CHO) cells, or myeloma cells that do not otherwise produce immunoglobulin protein, to obtain the synthesis of monoclonal antibodies in the recombinant host cells. The DNA also can be modified, for

example, by substituting the coding sequence for human heavy and light chain constant domains in place of the homologous murine sequences (U.S. Patent No. 4,816,567; Morrison, Nature 368, 812-13 (1994)) or by covalently joining to the immunoglobulin coding sequence all or part of the coding sequence for a non-immunoglobulin polypeptide. Such a non-immunoglobulin polypeptide can be substituted for the constant domains of an antibody of the invention, or can be substituted for the variable domains of one antigen-combining site of an antibody of the invention to create a chimeric bivalent antibody.

### 5.13.2 Humanized Antibodies

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10 The antibodies directed against the protein antigens of the invention can further comprise humanized antibodies or human antibodies. These antibodies are suitable for administration to humans without engendering an immune response by the human against the administered immunoglobulin. Humanized forms of antibodies are chimeric immunoglobulins, immunoglobulin chains or fragments thereof (such as Fv, Fab, Fab', F(ab')2 or other antigen-15 binding subsequences of antibodies) that are principally comprised of the sequence of a human immunoglobulin, and contain minimal sequence derived from a non-human immunoglobulin. Humanization can be performed following the method of Winter and co-workers (Jones et al., Nature, 321:522-525 (1986); Riechmann et al., Nature, 332:323-327 (1988); Verhoeyen et al., Science, 239:1534-1536 (1988)), by substituting rodent CDRs or CDR sequences for the 20 corresponding sequences of a human antibody. (See also U.S. Patent No. 5,225,539.) In some instances, Fv framework residues of the human immunoglobulin are replaced by corresponding non-human residues. Humanized antibodies can also comprise residues which are found neither in the recipient antibody nor in the imported CDR or framework sequences. In general, the humanized antibody will comprise substantially all of at least one, and typically two, variable 25 domains, in which all or substantially all of the CDR regions correspond to those of a non-human immunoglobulin and all or substantially all of the framework regions are those of a human immunoglobulin consensus sequence. The humanized antibody optimally also will comprise at least a portion of an immunoglobulin constant region (Fc), typically that of a human immunoglobulin (Jones et al., 1986; Riechmann et al., 1988; and Presta, Curr. Op. Struct. Biol., 30 2:593-596 (1992)).

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## 5.13.3 Human Antibodies

Fully human antibodies relate to antibody molecules in which essentially the entire sequences of both the light chain and the heavy chain, including the CDRs, arise from human genes. Such antibodies are termed "human antibodies", or "fully human antibodies" herein.

Human monoclonal antibodies can be prepared by the trioma technique; the human B-cell hybridoma technique (see Kozbor, et al., 1983 Immunol Today 4: 72) and the EBV hybridoma technique to produce human monoclonal antibodies (see Cole, et al., 1985 In: MONOCLONAL ANTIBODIES AND CANCER THERAPY, Alan R. Liss, Inc., pp. 77-96). Human monoclonal antibodies may be utilized in the practice of the present invention and may be produced by using human hybridomas (see Cote, et al., 1983. Proc Natl Acad Sci USA 80: 2026-2030) or by transforming human B-cells with Epstein Barr Virus in vitro (see Cole, et al., 1985 In: MONOCLONAL ANTIBODIES AND CANCER THERAPY, Alan R. Liss, Inc., pp. 77-96).

In addition, human antibodies can also be produced using additional techniques, including phage display libraries (Hoogenboom and Winter, J. Mol. Biol., 227:381 (1991); Marks et al., J. Mol. Biol., 222:581 (1991)). Similarly, human antibodies can be made by introducing human immunoglobulin loci into transgenic animals, e.g., mice in which the endogenous immunoglobulin genes have been partially or completely inactivated. Upon challenge, human antibody production is observed, which closely resembles that seen in humans in all respects, including gene rearrangement, assembly, and antibody repertoire. This approach is described, for example, in U.S. Patent Nos. 5,545,807; 5,545,806; 5,569,825; 5,625,126; 5,633,425; 5,661,016, and in Marks et al. (Bio/Technology 10, 779-783 (1992)); Lonberg et al. (Nature 368 856-859 (1994)); Morrison (Nature 368, 812-13 (1994)); Fishwild et al. (Nature Biotechnology 14, 845-51 (1996)); Neuberger (Nature Biotechnology 14, 826 (1996)); and Lonberg and Huszar (Intern. Rev. Immunol. 13 65-93 (1995)).

Human antibodies may additionally be produced using transgenic nonhuman animals which are modified so as to produce fully human antibodies rather than the animal's endogenous antibodies in response to challenge by an antigen. (See PCT publication WO94/02602). The endogenous genes encoding the heavy and light immunoglobulin chains in the nonhuman host have been incapacitated, and active loci encoding human heavy and light chain immunoglobulins are inserted into the host's genome. The human genes are incorporated, for example, using yeast artificial chromosomes containing the requisite human DNA segments. An animal which provides all the desired modifications is then obtained as progeny by crossbreeding intermediate transgenic animals containing fewer than the full complement of the modifications. The preferred embodiment of such a nonhuman animal is a mouse, and is termed the Xenomouse<sup>TM</sup> as disclosed in PCT publications WO 96/33735 and WO 96/34096. This animal produces B cells which secrete fully human immunoglobulins. The antibodies can be obtained directly from the animal after immunization with an immunogen of interest, as, for example, a preparation of a polyclonal antibody, or alternatively from immortalized B cells derived from the animal, such as hybridomas producing monoclonal antibodies. Additionally, the genes encoding the

immunoglobulins with human variable regions can be recovered and expressed to obtain the antibodies directly, or can be further modified to obtain analogs of antibodies such as, for example, single chain Fv molecules.

An example of a method of producing a nonhuman host, exemplified as a mouse, lacking expression of an endogenous immunoglobulin heavy chain is disclosed in U.S. Patent No. 5,939,598. It can be obtained by a method including deleting the J segment genes from at least one endogenous heavy chain locus in an embryonic stem cell to prevent rearrangement of the locus and to prevent formation of a transcript of a rearranged immunoglobulin heavy chain locus, the deletion being effected by a targeting vector containing a gene encoding a selectable marker; and producing from the embryonic stem cell a transgenic mouse whose somatic and germ cells contain the gene encoding the selectable marker.

A method for producing an antibody of interest, such as a human antibody, is disclosed in U.S. Patent No. 5,916,771. It includes introducing an expression vector that contains a nucleotide sequence encoding a heavy chain into one mammalian host cell in culture, introducing an expression vector containing a nucleotide sequence encoding a light chain into another mammalian host cell, and fusing the two cells to form a hybrid cell. The hybrid cell expresses an antibody containing the heavy chain and the light chain.

In a further improvement on this procedure, a method for identifying a clinically relevant epitope on an immunogen, and a correlative method for selecting an antibody that binds immunospecifically to the relevant epitope with high affinity, are disclosed in PCT publication WO 99/53049.

# 5.13.4 Fab Fragments and Single Chain Antibodies

According to the invention, techniques can be adapted for the production of single-chain antibodies specific to an antigenic protein of the invention (see e.g., U.S. Patent No. 4,946,778). In addition, methods can be adapted for the construction of  $F_{ab}$  expression libraries (see e.g., Huse, et al., 1989 Science 246: 1275-1281) to allow rapid and effective identification of monoclonal  $F_{ab}$  fragments with the desired specificity for a protein or derivatives, fragments, analogs or homologs thereof. Antibody fragments that contain the idiotypes to a protein antigen may be produced by techniques known in the art including, but not limited to: (i) an  $F_{(ab')2}$  fragment produced by pepsin digestion of an antibody molecule; (ii) an  $F_{ab}$  fragment generated by reducing the disulfide bridges of an  $F_{(ab')2}$  fragment; (iii) an  $F_{ab}$  fragment generated by the treatment of the antibody molecule with papain and a reducing agent and (iv)  $F_v$  fragments.

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Bispecific antibodies are monoclonal, preferably human or humanized, antibodies that have binding specificities for at least two different antigens. In the present case, one of the binding specificities is for an antigenic protein of the invention. The second binding target is any other antigen, and advantageously is a cell-surface protein or receptor or receptor subunit.

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Methods for making bispecific antibodies are known in the art. Traditionally, the recombinant production of bispecific antibodies is based on the co-expression of two immunoglobulin heavy-chain/light-chain pairs, where the two heavy chains have different specificities (Milstein and Cuello, Nature, 305:537-539 (1983)). Because of the random assortment of immunoglobulin heavy and light chains, these hybridomas (quadromas) produce a potential mixture of ten different antibody molecules, of which only one has the correct bispecific structure. The purification of the correct molecule is usually accomplished by affinity chromatography steps. Similar procedures are disclosed in WO 93/08829, published 13 May 1993, and in Traunecker *et al.*, 1991 *EMBO J.*, 10:3655-3659.

Antibody variable domains with the desired binding specificities (antibody-antigen combining sites) can be fused to immunoglobulin constant domain sequences. The fusion preferably is with an immunoglobulin heavy-chain constant domain, comprising at least part of the hinge, CH2, and CH3 regions. It is preferred to have the first heavy-chain constant region (CH1) containing the site necessary for light-chain binding present in at least one of the fusions. DNAs encoding the immunoglobulin heavy-chain fusions and, if desired, the immunoglobulin light chain, are inserted into separate expression vectors, and are co-transfected into a suitable host organism. For further details of generating bispecific antibodies see, for example, Suresh et al., Methods in Enzymology, 121:210 (1986).

According to another approach described in WO 96/27011, the interface between a pair of antibody molecules can be engineered to maximize the percentage of heterodimers which are recovered from recombinant cell culture. The preferred interface comprises at least a part of the CH3 region of an antibody constant domain. In this method, one or more small amino acid side chains from the interface of the first antibody molecule are replaced with larger side chains (e.g. tyrosine or tryptophan). Compensatory "cavities" of identical or similar size to the large side chain(s) are created on the interface of the second antibody molecule by replacing large amino acid side chains with smaller ones (e.g. alanine or threonine). This provides a mechanism for increasing the yield of the heterodimer over other unwanted end-products such as homodimers.

Bispecific antibodies can be prepared as full length antibodies or antibody fragments (e.g. F(ab')<sub>2</sub> bispecific antibodies). Techniques for generating bispecific antibodies from antibody fragments have been described in the literature. For example, bispecific antibodies can be prepared using chemical linkage. Brennan et al., Science 229:81 (1985) describe a procedure

wherein intact antibodies are proteolytically cleaved to generate F(ab')<sub>2</sub> fragments. These fragments are reduced in the presence of the dithiol complexing agent sodium arsenite to stabilize vicinal dithiols and prevent intermolecular disulfide formation. The Fab' fragments generated are then converted to thionitrobenzoate (TNB) derivatives. One of the Fab'-TNB derivatives is then reconverted to the Fab'-thiol by reduction with mercaptoethylamine and is mixed with an equimolar amount of the other Fab'-TNB derivative to form the bispecific antibody. The bispecific antibodies produced can be used as agents for the selective immobilization of enzymes.

Additionally, Fab' fragments can be directly recovered from E. coli and chemically coupled to form bispecific antibodies. Shalaby et al., J. Exp. Med. 175:217-225 (1992) describe the production of a fully humanized bispecific antibody F(ab')<sub>2</sub> molecule. Each Fab' fragment was separately secreted from E. coli and subjected to directed chemical coupling in vitro to form the bispecific antibody. The bispecific antibody thus formed was able to bind to cells overexpressing the ErbB2 receptor and normal human T cells, as well as trigger the lytic activity of human cytotoxic lymphocytes against human breast tumor targets.

Various techniques for making and isolating bispecific antibody fragments directly from recombinant cell culture have also been described. For example, bispecific antibodies have been produced using leucine zippers. Kostelny et al., J. Immunol. 148(5):1547-1553 (1992). The leucine zipper peptides from the Fos and Jun proteins were linked to the Fab' portions of two different antibodies by gene fusion. The antibody homodimers were reduced at the hinge region to form monomers and then re-oxidized to form the antibody heterodimers. This method can also be utilized for the production of antibody homodimers. The "diabody" technology described by Hollinger et al., Proc. Natl. Acad. Sci. USA 90:6444-6448 (1993) has provided an alternative mechanism for making bispecific antibody fragments. The fragments comprise a heavy-chain variable domain (V<sub>H</sub>) connected to a light-chain variable domain (V<sub>L</sub>) by a linker which is too short to allow pairing between the two domains on the same chain. Accordingly, the V<sub>H</sub> and V<sub>L</sub> domains of one fragment are forced to pair with the complementary V<sub>L</sub> and V<sub>H</sub> domains of another fragment, thereby forming two antigen-binding sites. Another strategy for making bispecific antibody fragments by the use of single-chain Fv (sFv) dimers has also been reported. See, Gruber et al., J. Immunol. 152:5368 (1994).

Antibodies with more than two valencies are contemplated. For example, trispecific antibodies can be prepared. Tutt et al., <u>J. Immunol.</u> 147:60 (1991). Exemplary bispecific antibodies can bind to two different epitopes, at least one of which originates in the protein antigen of the invention. Alternatively, an anti-antigenic arm of an immunoglobulin molecule can be combined with an arm which binds to a triggering molecule on

a leukocyte such as a T-cell receptor molecule (e.g. CD2, CD3, CD28, or B7), or Fc receptors for IgG (FcγR), such as FcγRI (CD64), FcγRII (CD32) and FcγRII (CD16) so as to focus cellular defense mechanisms to the cell expressing the particular antigen. Bispecific antibodies can also be used to direct cytotoxic agents to cells which express a particular antigen. These antibodies possess an antigen-binding arm and an arm which binds a cytotoxic agent or a radionuclide chelator, such as EOTUBE, DPTA, DOTA, or TETA. Another bispecific antibody of interest binds the protein antigen described herein and further binds tissue factor (TF).

#### 5.13.6 Heteroconjugate Antibodies

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Heteroconjugate antibodies are also within the scope of the present invention. Heteroconjugate antibodies are composed of two covalently joined antibodies. Such antibodies have, for example, been proposed to target immune system cells to unwanted cells (U.S. Patent No. 4,676,980), and for treatment of HIV infection (WO 91/00360; WO 92/200373; EP 03089). It is contemplated that the antibodies can be prepared in vitro using known methods in synthetic protein chemistry, including those involving crosslinking agents. For example, immunotoxins can be constructed using a disulfide exchange reaction or by forming a thioether bond. Examples of suitable reagents for this purpose include iminothiolate and methyl-4-mercaptobutyrimidate and those disclosed, for example, in U.S. Patent No. 4,676,980.

#### 5.13.7 Effector Function Engineering

It can be desirable to modify the antibody of the invention with respect to effector function, so as to enhance, *e.g.*, the effectiveness of the antibody in treating cancer. For example, cysteine residue(s) can be introduced into the Fc region, thereby allowing interchain disulfide bond formation in this region. The homodimeric antibody thus generated can have improved internalization capability and/or increased complement-mediated cell killing and antibody-dependent cellular cytotoxicity (ADCC). See Caron et al., J. Exp Med., 176: 1191-1195 (1992) and Shopes, J. Immunol., 148: 2918-2922 (1992). Homodimeric antibodies with enhanced antitumor activity can also be prepared using heterobifunctional cross-linkers as described in Wolff et al. Cancer Research, 53: 2560-2565 (1993). Alternatively, an antibody can be engineered that has dual Fc regions and can thereby have enhanced complement lysis and ADCC capabilities. See Stevenson et al., Anti-Cancer Drug Design, 3: 219-230 (1989).

### 5.13.8 Immunoconjugates

The invention also pertains to immunoconjugates comprising an antibody conjugated to a cytotoxic agent such as a chemotherapeutic agent, toxin (e.g., an enzymatically active toxin of

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bacterial, fungal, plant, or animal origin, or fragments thereof), or a radioactive isotope (i.e., a radioconjugate).

Chemotherapeutic agents useful in the generation of such immunoconjugates have been described above. Enzymatically active toxins and fragments thereof that can be used include diphtheria A chain, nonbinding active fragments of diphtheria toxin, exotoxin A chain (from Pseudomonas aeruginosa), ricin A chain, abrin A chain, modeccin A chain, alpha-sarcin, Aleurites fordii proteins, dianthin proteins, Phytolaca americana proteins (PAPI, PAPII, and PAP-S), momordica charantia inhibitor, curcin, crotin, sapaonaria officinalis inhibitor, gelonin, mitogellin, restrictocin, phenomycin, enomycin, and the tricothecenes. A variety of radionuclides are available for the production of radioconjugated antibodies. Examples include <sup>212</sup>Bi, <sup>131</sup>I, <sup>131</sup>In, <sup>90</sup>Y, and <sup>186</sup>Re.

Conjugates of the antibody and cytotoxic agent are made using a variety of bifunctional protein-coupling agents such as N-succinimidyl-3-(2-pyridyldithiol) propionate (SPDP), iminothiolane (IT), bifunctional derivatives of imidoesters (such as dimethyl adipimidate HCL), active esters (such as disuccinimidyl suberate), aldehydes (such as glutareldehyde), bis-azido compounds (such as bis (p-azidobenzoyl) hexanediamine), bis-diazonium derivatives (such as bis-(p-diazoniumbenzoyl)-ethylenediamine), diisocyanates (such as tolyene 2,6-diisocyanate), and bis-active fluorine compounds (such as 1,5-difluoro-2,4-dinitrobenzene). For example, a ricin immunotoxin can be prepared as described in Vitetta et al., Science, 238: 1098 (1987). Carbon-14-labeled 1-isothiocyanatobenzyl-3-methyldiethylene triaminepentaacetic acid (MX-DTPA) is an exemplary chelating agent for conjugation of radionucleotide to the antibody. See WO94/11026.

In another embodiment, the antibody can be conjugated to a "receptor" (such streptavidin) for utilization in tumor pretargeting wherein the antibody-receptor conjugate is administered to the patient, followed by removal of unbound conjugate from the circulation using a clearing agent and then administration of a "ligand" (e.g., avidin) that is in turn conjugated to a cytotoxic agent.

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## 4.14 COMPUTER READABLE SEQUENCES

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In one application of this embodiment, a nucleotide sequence of the present invention can be recorded on computer readable media. As used herein, "computer readable media" refers to any medium which can be read and accessed directly by a computer. Such media include, but are not limited to: magnetic storage media, such as floppy discs, hard disc storage medium, and magnetic tape; optical storage media such as CD-ROM; electrical storage media such as RAM and ROM; and hybrids of these categories such as magnetic/optical storage media. A skilled

artisan can readily appreciate how any of the presently known computer readable mediums can be used to create a manufacture comprising computer readable medium having recorded thereon a nucleotide sequence of the present invention. As used herein, "recorded" refers to a process for storing information on computer readable medium. A skilled artisan can readily adopt any of the presently known methods for recording information on computer readable medium to generate manufactures comprising the nucleotide sequence information of the present invention.

A variety of data storage structures are available to a skilled artisan for creating a computer readable medium having recorded thereon a nucleotide sequence of the present invention. The choice of the data storage structure will generally be based on the means chosen to access the stored information. In addition, a variety of data processor programs and formats can be used to store the nucleotide sequence information of the present invention on computer readable medium. The sequence information can be represented in a word processing text file, formatted in commercially-available software such as WordPerfect and Microsoft Word, or represented in the form of an ASCII file, stored in a database application, such as DB2, Sybase, Oracle, or the like. A skilled artisan can readily adapt any number of data processor structuring formats (e.g. text file or database) in order to obtain computer readable medium having recorded thereon the nucleotide sequence information of the present invention.

By providing any of the nucleotide sequences SEQ ID NO:1-1009 or a representative fragment thereof; or a nucleotide sequence at least 95% identical to any of the nucleotide sequences of SEQ ID NO:1-1009 in computer readable form, a skilled artisan can routinely access the sequence information for a variety of purposes. Computer software is publicly available which allows a skilled artisan to access sequence information provided in a computer readable medium. The examples which follow demonstrate how software which implements the BLAST (Altschul et al., J. Mol. Biol. 215:403-410 (1990)) and BLAZE (Brutlag et al., Comp. Chem. 17:203-207 (1993)) search algorithms on a Sybase system is used to identify open reading frames (ORFs) within a nucleic acid sequence. Such ORFs may be protein encoding fragments and may be useful in producing commercially important proteins such as enzymes used in fermentation reactions and in the production of commercially useful metabolites.

As used herein, "a computer-based system" refers to the hardware means, software means, and data storage means used to analyze the nucleotide sequence information of the present invention. The minimum hardware means of the computer-based systems of the present invention comprises a central processing unit (CPU), input means, output means, and data storage means. A skilled artisan can readily appreciate that any one of the currently available computer-based systems are suitable for use in the present invention. As stated above, the computer-based systems of the present invention comprise a data storage means having stored

therein a nucleotide sequence of the present invention and the necessary hardware means and software means for supporting and implementing a search means. As used herein, "data storage means" refers to memory which can store nucleotide sequence information of the present invention, or a memory access means which can access manufactures having recorded thereon the nucleotide sequence information of the present invention.

As used herein, "search means" refers to one or more programs which are implemented on the computer-based system to compare a target sequence or target structural motif with the sequence information stored within the data storage means. Search means are used to identify fragments or regions of a known sequence which match a particular target sequence or target motif. A variety of known algorithms are disclosed publicly and a variety of commercially available software for conducting search means are and can be used in the computer-based systems of the present invention. Examples of such software includes, but is not limited to, Smith-Waterman, MacPattern (EMBL), BLASTN and BLASTA (NPOLYPEPTIDEIA). A skilled artisan can readily recognize that any one of the available algorithms or implementing software packages for conducting homology searches can be adapted for use in the present computer-based systems. As used herein, a "target sequence" can be any nucleic acid or amino acid sequence of six or more nucleotides or two or more amino acids. A skilled artisan can readily recognize that the longer a target sequence is, the less likely a target sequence will be present as a random occurrence in the database. The most preferred sequence length of a target sequence is from about 10 to 300 amino acids, more preferably from about 30 to 100 nucleotide residues. However, it is well recognized that searches for commercially important fragments, such as sequence fragments involved in gene expression and protein processing, may be of shorter length.

As used herein, "a target structural motif," or "target motif," refers to any rationally selected sequence or combination of sequences in which the sequence(s) are chosen based on a three-dimensional configuration which is formed upon the folding of the target motif. There are a variety of target motifs known in the art. Protein target motifs include, but are not limited to, enzyme active sites and signal sequences. Nucleic acid target motifs include, but are not limited to, promoter sequences, hairpin structures and inducible expression elements (protein binding sequences).

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#### 4.15 TRIPLE HELIX FORMATION

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In addition, the fragments of the present invention, as broadly described, can be used to control gene expression through triple helix formation or antisense DNA or RNA, both of which methods are based on the binding of a polynucleotide sequence to DNA or RNA.

Polynucleotides suitable for use in these methods are preferably 20 to 40 bases in length and are designed to be complementary to a region of the gene involved in transcription (triple helix - see Lee et al., Nucl. Acids Res. 6:3073 (1979); Cooney et al., Science 15241:456 (1988); and Dervan et al., Science 251:1360 (1991)) or to the mRNA itself (antisense - Olmno, J. Neurochem. 56:560 (1991); Oligodeoxynucleotides as Antisense Inhibitors of Gene Expression, CRC Press, Boca Raton, FL (1988)). Triple helix-formation optimally results in a shut-off of RNA transcription from DNA, while antisense RNA hybridization blocks translation of an mRNA molecule into polypeptide. Both techniques have been demonstrated to be effective in model systems. Information contained in the sequences of the present invention is necessary for the design of an antisense or triple helix oligonucleotide.

### 4.16 DIAGNOSTIC ASSAYS AND KITS

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The present invention further provides methods to identify the presence or expression of one of the ORFs of the present invention, or homolog thereof, in a test sample, using a nucleic acid probe or antibodies of the present invention, optionally conjugated or otherwise associated with a suitable label.

In general, methods for detecting a polynucleotide of the invention can comprise contacting a sample with a compound that binds to and forms a complex with the polynucleotide for a period sufficient to form the complex, and detecting the complex, so that if a complex is detected, a polynucleotide of the invention is detected in the sample. Such methods can also comprise contacting a sample under stringent hybridization conditions with nucleic acid primers that anneal to a polynucleotide of the invention under such conditions, and amplifying annealed polynucleotides, so that if a polynucleotide is amplified, a polynucleotide of the invention is detected in the sample.

In general, methods for detecting a polypeptide of the invention can comprise contacting a sample with a compound that binds to and forms a complex with the polypeptide for a period sufficient to form the complex, and detecting the complex, so that if a complex is detected, a polypeptide of the invention is detected in the sample.

In detail, such methods comprise incubating a test sample with one or more of the antibodies or one or more of the nucleic acid probes of the present invention and assaying for binding of the nucleic acid probes or antibodies to components within the test sample.

Conditions for incubating a nucleic acid probe or antibody with a test sample vary. Incubation conditions depend on the format employed in the assay, the detection methods employed, and the type and nature of the nucleic acid probe or antibody used in the assay. One skilled in the art will recognize that any one of the commonly available hybridization,

amplification or immunological assay formats can readily be adapted to employ the nucleic acid probes or antibodies of the present invention. Examples of such assays can be found in Chard, T., An Introduction to Radioimmunoassay and Related Techniques, Elsevier Science Publishers, Amsterdam, The Netherlands (1986); Bullock, G.R. et al., Techniques in Immunocytochemistry, Academic Press, Orlando, FL Vol. 1 (1982), Vol. 2 (1983), Vol. 3 (1985); Tijssen, P., Practice and Theory of immunoassays: Laboratory Techniques in Biochemistry and Molecular Biology, Elsevier Science Publishers, Amsterdam, The Netherlands (1985). The test samples of the present invention include cells, protein or membrane extracts of cells, or biological fluids such as sputum, blood, serum, plasma, or urine. The test sample used in the above-described method will vary based on the assay format, nature of the detection method and the tissues, cells or extracts used as the sample to be assayed. Methods for preparing protein extracts or membrane extracts of cells are well known in the art and can be readily be adapted in order to obtain a sample which is compatible with the system utilized.

In another embodiment of the present invention, kits are provided which contain the necessary reagents to carry out the assays of the present invention. Specifically, the invention provides a compartment kit to receive, in close confinement, one or more containers which comprises: (a) a first container comprising one of the probes or antibodies of the present invention; and (b) one or more other containers comprising one or more of the following: wash reagents, reagents capable of detecting presence of a bound probe or antibody.

In detail, a compartment kit includes any kit in which reagents are contained in separate containers. Such containers include small glass containers, plastic containers or strips of plastic or paper. Such containers allows one to efficiently transfer reagents from one compartment to another compartment such that the samples and reagents are not cross-contaminated, and the agents or solutions of each container can be added in a quantitative fashion from one compartment to another. Such containers will include a container which will accept the test sample, a container which contains the antibodies used in the assay, containers which contain wash reagents (such as phosphate buffered saline, Tris-buffers, etc.), and containers which contain the reagents used to detect the bound antibody or probe. Types of detection reagents include labeled nucleic acid probes, labeled secondary antibodies, or in the alternative, if the primary antibody is labeled, the enzymatic, or antibody binding reagents which are capable of reacting with the labeled antibody. One skilled in the art will readily recognize that the disclosed probes and antibodies of the present invention can be readily incorporated into one of the established kit formats which are well known in the art.

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The novel polypeptides and binding partners of the invention are useful in medical imaging of sites expressing the molecules of the invention (e.g., where the polypeptide of the invention is involved in the immune response, for imaging sites of inflammation or infection). See, e.g., Kunkel et al., U.S. Pat. NO. 5,413,778. Such methods involve chemical attachment of a labeling or imaging agent, administration of the labeled polypeptide to a subject in a pharmaceutically acceptable carrier, and imaging the labeled polypeptide in vivo at the target site.

### 4.18 SCREENING ASSAYS

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Using the isolated proteins and polynucleotides of the invention, the present invention further provides methods of obtaining and identifying agents which bind to a polypeptide encoded by an ORF corresponding to any of the nucleotide sequences set forth in SEQ ID NO:1-1009, or bind to a specific domain of the polypeptide encoded by the nucleic acid. In detail, said method comprises the steps of:

- (a) contacting an agent with an isolated protein encoded by an ORF of the present invention, or nucleic acid of the invention; and
  - (b) determining whether the agent binds to said protein or said nucleic acid.

In general, therefore, such methods for identifying compounds that bind to a polynucleotide of the invention can comprise contacting a compound with a polynucleotide of the invention for a time sufficient to form a polynucleotide/compound complex, and detecting the complex, so that if a polynucleotide/compound complex is detected, a compound that binds to a polynucleotide of the invention is identified.

Likewise, in general, therefore, such methods for identifying compounds that bind to a polypeptide of the invention can comprise contacting a compound with a polypeptide of the invention for a time sufficient to form a polypeptide/compound complex, and detecting the complex, so that if a polypeptide/compound complex is detected, a compound that binds to a polynucleotide of the invention is identified.

Methods for identifying compounds that bind to a polypeptide of the invention can also comprise contacting a compound with a polypeptide of the invention in a cell for a time sufficient to form a polypeptide/compound complex, wherein the complex drives expression of a receptor gene sequence in the cell, and detecting the complex by detecting reporter gene sequence expression, so that if a polypeptide/compound complex is detected, a compound that binds a polypeptide of the invention is identified.

Compounds identified via such methods can include compounds which modulate the activity of a polypeptide of the invention (that is, increase or decrease its activity, relative to

activity observed in the absence of the compound). Alternatively, compounds identified via such methods can include compounds which modulate the expression of a polynucleotide of the invention (that is, increase or decrease expression relative to expression levels observed in the absence of the compound). Compounds, such as compounds identified via the methods of the invention, can be tested using standard assays well known to those of skill in the art for their ability to modulate activity/expression.

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The agents screened in the above assay can be, but are not limited to, peptides, carbohydrates, vitamin derivatives, or other pharmaceutical agents. The agents can be selected and screened at random or rationally selected or designed using protein modeling techniques.

For random screening, agents such as peptides, carbohydrates, pharmaceutical agents and the like are selected at random and are assayed for their ability to bind to the protein encoded by the ORF of the present invention. Alternatively, agents may be rationally selected or designed. As used herein, an agent is said to be "rationally selected or designed" when the agent is chosen based on the configuration of the particular protein. For example, one skilled in the art can readily adapt currently available procedures to generate peptides, pharmaceutical agents and the like, capable of binding to a specific peptide sequence, in order to generate rationally designed antipeptide peptides, for example see Hurby et al., Application of Synthetic Peptides: Antisense Peptides," In Synthetic Peptides, A User's Guide, W.H. Freeman, NY (1992), pp. 289-307, and Kaspczak et al., Biochemistry 28:9230-8 (1989), or pharmaceutical agents, or the like.

In addition to the foregoing, one class of agents of the present invention, as broadly described, can be used to control gene expression through binding to one of the ORFs or EMFs of the present invention. As described above, such agents can be randomly screened or rationally designed/selected. Targeting the ORF or EMF allows a skilled artisan to design sequence specific or element specific agents, modulating the expression of either a single ORF or multiple ORFs which rely on the same EMF for expression control. One class of DNA binding agents are agents which contain base residues which hybridize or form a triple helix formation by binding to DNA or RNA. Such agents can be based on the classic phosphodiester, ribonucleic acid backbone, or can be a variety of sulfhydryl or polymeric derivatives which have base attachment capacity.

Agents suitable for use in these methods preferably contain 20 to 40 bases and are designed to be complementary to a region of the gene involved in transcription (triple helix - see Lee et al., Nucl. Acids Res. 6:3073 (1979); Cooney et al., Science 241:456 (1988); and Dervan et al., Science 251:1360 (1991)) or to the mRNA itself (antisense - Okano, J. Neurochem. 56:560 (1991); Oligodeoxynucleotides as Antisense Inhibitors of Gene Expression, CRC Press, Boca Raton, FL (1988)). Triple helix-formation optimally results in a shut-off of RNA transcription

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from DNA, while antisense RNA hybridization blocks translation of an mRNA molecule into polypeptide. Both techniques have been demonstrated to be effective in model systems. Information contained in the sequences of the present invention is necessary for the design of an antisense or triple helix oligonucleotide and other DNA binding agents.

Agents which bind to a protein encoded by one of the ORFs of the present invention can be used as a diagnostic agent. Agents which bind to a protein encoded by one of the ORFs of the present invention can be formulated using known techniques to generate a pharmaceutical composition.

### 4.19 USE OF NUCLEIC ACIDS AS PROBES

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Another aspect of the subject invention is to provide for polypeptide-specific nucleic acid hybridization probes capable of hybridizing with naturally occurring nucleotide sequences. The hybridization probes of the subject invention may be derived from any of the nucleotide sequences SEQ ID NO:1-1009. Because the corresponding gene is only expressed in a limited number of tissues, a hybridization probe derived from of any of the nucleotide sequences SEQ ID NO:1-1009 can be used as an indicator of the presence of RNA of cell type of such a tissue in a sample.

Any suitable hybridization technique can be employed, such as, for example, in situ hybridization. PCR as described in US Patents Nos. 4,683,195 and 4,965,188 provides additional uses for oligonucleotides based upon the nucleotide sequences. Such probes used in PCR may be of recombinant origin, may be chemically synthesized, or a mixture of both. The probe will comprise a discrete nucleotide sequence for the detection of identical sequences or a degenerate pool of possible sequences for identification of closely related genomic sequences.

Other means for producing specific hybridization probes for nucleic acids include the cloning of nucleic acid sequences into vectors for the production of mRNA probes. Such vectors are known in the art and are commercially available and may be used to synthesize RNA probes in vitro by means of the addition of the appropriate RNA polymerase as T7 or SP6 RNA polymerase and the appropriate radioactively labeled nucleotides. The nucleotide sequences may be used to construct hybridization probes for mapping their respective genomic sequences. The nucleotide sequence provided herein may be mapped to a chromosome or specific regions of a chromosome using well known genetic and/or chromosomal mapping techniques. These techniques include in situ hybridization, linkage analysis against known chromosomal markers, hybridization screening with libraries or flow-sorted chromosomal preparations specific to known chromosomes, and the like. The technique of fluorescent in situ hybridization of

chromosome spreads has been described, among other places, in Verma et al (1988) Human Chromosomes: A Manual of Basic Techniques, Pergamon Press, New York NY.

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Fluorescent *in situ* hybridization of chromosomal preparations and other physical chromosome mapping techniques may be correlated with additional genetic map data. Examples of genetic map data can be found in the 1994 Genome Issue of Science (265:1981f). Correlation between the location of a nucleic acid on a physical chromosomal map and a specific disease (or predisposition to a specific disease) may help delimit the region of DNA associated with that genetic disease. The nucleotide sequences of the subject invention may be used to detect differences in gene sequences between normal, carrier or affected individuals.

### 4.20 PREPARATION OF SUPPORT BOUND OLIGONUCLEOTIDES

Oligonucleotides, *i.e.*, small nucleic acid segments, may be readily prepared by, for example, directly synthesizing the oligonucleotide by chemical means, as is commonly practiced using an automated oligonucleotide synthesizer.

Support bound oligonucleotides may be prepared by any of the methods known to those of skill in the art using any suitable support such as glass, polystyrene or Teflon. One strategy is to precisely spot oligonucleotides synthesized by standard synthesizers. Immobilization can be achieved using passive adsorption (Inouye & Hondo, (1990) J. Clin. Microbiol. 28(6) 1469-72); using UV light (Nagata *et al.*, 1985; Dahlen *et al.*, 1987; Morrissey & Collins, (1989) Mol. Cell Probes 3(2) 189-207) or by covalent binding of base modified DNA (Keller *et al.*, 1988; 1989); all references being specifically incorporated herein.

Another strategy that may be employed is the use of the strong biotin-streptavidin interaction as a linker. For example, Broude *et al.* (1994) Proc. Natl. Acad. Sci. USA 91(8) 3072-6, describe the use of biotinylated probes, although these are duplex probes, that are immobilized on streptavidin-coated magnetic beads. Streptavidin-coated beads may be purchased from Dynal, Oslo. Of course, this same linking chemistry is applicable to coating any surface with streptavidin. Biotinylated probes may be purchased from various sources, such as, *e.g.*, Operon Technologies (Alameda, CA).

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Nunc Laboratories (Naperville, IL) is also selling suitable material that could be used. Nunc Laboratories have developed a method by which DNA can be covalently bound to the microwell surface termed Covalink NH. CovaLink NH is a polystyrene surface grafted with secondary amino groups (>NH) that serve as bridge-heads for further covalent coupling. CovaLink Modules may be purchased from Nunc Laboratories. DNA molecules may be bound to CovaLink exclusively at the 5'-end by a phosphoramidate bond, allowing immobilization of more than 1 pmol of DNA (Rasmussen et al., (1991) Anal. Biochem. 198(1) 138-42).

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The use of CovaLink NH strips for covalent binding of DNA molecules at the 5'-end has been described (Rasmussen et al., (1991). In this technology, a phosphoramidate bond is employed (Chu et al., (1983) Nucleic Acids Res. 11(8) 6513-29). This is beneficial as immobilization using only a single covalent bond is preferred. The phosphoramidate bond joins the DNA to the CovaLink NH secondary amino groups that are positioned at the end of spacer arms covalently grafted onto the polystyrene surface through a 2 nm long spacer arm. To link an oligonucleotide to CovaLink NH via an phosphoramidate bond, the oligonucleotide terminus must have a 5'-end phosphate group. It is, perhaps, even possible for biotin to be covalently bound to CovaLink and then streptavidin used to bind the probes.

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More specifically, the linkage method includes dissolving DNA in water (7.5 ng/ul) and denaturing for 10 min. at 95°C and cooling on ice for 10 min. Ice-cold 0.1 M 1-methylimidazole, pH 7.0 (1-MeIm<sub>7</sub>), is then added to a final concentration of 10 mM 1-MeIm<sub>7</sub>. A ss DNA solution is then dispensed into CovaLink NH strips (75 ul/well) standing on ice.

Carbodiimide 0.2 M 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide (EDC), dissolved in 10 mM 1-MeIm<sub>7</sub>, is made fresh and 25 ul added per well. The strips are incubated for 5 hours at 50°C. After incubation the strips are washed using, *e.g.*, Nunc-Immuno Wash; first the wells are washed 3 times, then they are soaked with washing solution for 5 min., and finally they are washed 3 times (where in the washing solution is 0.4 N NaOH, 0.25% SDS heated to 50°C).

It is contemplated that a further suitable method for use with the present invention is that described in PCT Patent Application WO 90/03382 (Southern & Maskos), incorporated herein by reference. This method of preparing an oligonucleotide bound to a support involves attaching a nucleoside 3'-reagent through the phosphate group by a covalent phosphodiester link to aliphatic hydroxyl groups carried by the support. The oligonucleotide is then synthesized on the supported nucleoside and protecting groups removed from the synthetic oligonucleotide chain under standard conditions that do not cleave the oligonucleotide from the support. Suitable reagents include nucleoside phosphoramidite and nucleoside hydrogen phosphorate.

An on-chip strategy for the preparation of DNA probe for the preparation of DNA probe arrays may be employed. For example, addressable laser-activated photodeprotection may be employed in the chemical synthesis of oligonucleotides directly on a glass surface, as described by Fodor *et al.* (1991) Science 251(4995) 767-73, incorporated herein by reference. Probes may also be immobilized on nylon supports as described by Van Ness *et al.* (1991) Nucleic Acids Res. 19(12) 3345-50; or linked to Teflon using the method of Duncan & Cavalier (1988) Anal. Biochem. 169(1) 104-8; all references being specifically incorporated herein.

To link an oligonucleotide to a nylon support, as described by Van Ness *et al.* (1991), requires activation of the nylon surface via alkylation and selective activation of the 5'-amine of oligonucleotides with cyanuric chloride.

One particular way to prepare support bound oligonucleotides is to utilize the light-generated synthesis described by Pease *et al.*, (1994) PNAS USA 91(11) 5022-6, incorporated herein by reference). These authors used current photolithographic techniques to generate arrays of immobilized oligonucleotide probes (DNA chips). These methods, in which light is used to direct the synthesis of oligonucleotide probes in high-density, miniaturized arrays, utilize photolabile 5'-protected *N*-acyl-deoxynucleoside phosphoramidites, surface linker chemistry and versatile combinatorial synthesis strategies. A matrix of 256 spatially defined oligonucleotide probes may be generated in this manner.

### 4.21 PREPARATION OF NUCLEIC ACID FRAGMENTS

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The nucleic acids may be obtained from any appropriate source, such as cDNAs, genomic DNA, chromosomal DNA, microdissected chromosome bands, cosmid or YAC inserts, and RNA, including mRNA without any amplification steps. For example, Sambrook *et al.* (1989) describes three protocols for the isolation of high molecular weight DNA from mammalian cells (p. 9.14-9.23).

DNA fragments may be prepared as clones in M13, plasmid or lambda vectors and/or prepared directly from genomic DNA or cDNA by PCR or other amplification methods. Samples may be prepared or dispensed in multiwell plates. About 100-1000 ng of DNA samples may be prepared in 2-500 ml of final volume.

The nucleic acids would then be fragmented by any of the methods known to those of skill in the art including, for example, using restriction enzymes as described at 9.24-9.28 of Sambrook *et al.* (1989), shearing by ultrasound and NaOH treatment.

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Low pressure shearing is also appropriate, as described by Schriefer *et al.* (1990) Nucleic Acids Res. 18(24) 7455-6, incorporated herein by reference). In this method, DNA samples are passed through a small French pressure cell at a variety of low to intermediate pressures. A lever device allows controlled application of low to intermediate pressures to the cell. The results of these studies indicate that low-pressure shearing is a useful alternative to sonic and enzymatic DNA fragmentation methods.

One particularly suitable way for fragmenting DNA is contemplated to be that using the two base recognition endonuclease, CviJI, described by Fitzgerald et al. (1992) Nucleic Acids Res. 20(14) 3753-62. These authors described an approach for the rapid fragmentation and fractionation

of DNA into particular sizes that they contemplated to be suitable for shotgun cloning and sequencing.

The restriction endonuclease  $Cvi\Pi$  normally cleaves the recognition sequence PuGCPy between the G and C to leave blunt ends. Atypical reaction conditions, which alter the specificity of this enzyme ( $Cvi\Pi^{**}$ ), yield a quasi-random distribution of DNA fragments form the small molecule pUC19 (2688 base pairs). Fitzgerald *et al.* (1992) quantitatively evaluated the randomness of this fragmentation strategy, using a  $Cvi\Pi^{**}$  digest of pUC19 that was size fractionated by a rapid gel filtration method and directly ligated, without end repair, to a lac Z minus M13 cloning vector. Sequence analysis of 76 clones showed that  $Cvi\Pi^{**}$  restricts pyGCPy and PuGCPu, in addition to PuGCPy sites, and that new sequence data is accumulated at a rate consistent with random fragmentation.

As reported in the literature, advantages of this approach compared to sonication and agarose gel fractionation include: smaller amounts of DNA are required (0.2-0.5 ug instead of 2-5 ug); and fewer steps are involved (no preligation, end repair, chemical extraction, or agarose gel electrophoresis and elution are needed

Irrespective of the manner in which the nucleic acid fragments are obtained or prepared, it is important to denature the DNA to give single stranded pieces available for hybridization. This is achieved by incubating the DNA solution for 2-5 minutes at 80-90°C. The solution is then cooled quickly to 2°C to prevent renaturation of the DNA fragments before they are contacted with the chip. Phosphate groups must also be removed from genomic DNA by methods known in the art.

### 4.22 PREPARATION OF DNA ARRAYS

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Arrays may be prepared by spotting DNA samples on a support such as a nylon membrane. Spotting may be performed by using arrays of metal pins (the positions of which correspond to an array of wells in a microtiter plate) to repeated by transfer of about 20 nl of a DNA solution to a nylon membrane. By offset printing, a density of dots higher than the density of the wells is achieved. One to 25 dots may be accommodated in 1 mm², depending on the type of label used. By avoiding spotting in some preselected number of rows and columns, separate subsets (subarrays) may be formed. Samples in one subarray may be the same genomic segment of DNA (or the same gene) from different individuals, or may be different, overlapped genomic clones. Each of the subarrays may represent replica spotting of the same samples. In one example, a selected gene segment may be amplified from 64 patients. For each patient, the amplified gene segment may be in one 96-well plate (all 96 wells containing the same sample). A plate for each of the 64 patients is prepared. By using a 96-pin device, all samples may be spotted on one 8 x 12 cm membrane.

Subarrays may contain 64 samples, one from each patient. Where the 96 subarrays are identical, the dot span may be 1 mm<sup>2</sup> and there may be a 1 mm space between subarrays.

Another approach is to use membranes or plates (available from NUNC, Naperville, Illinois) which may be partitioned by physical spacers e.g. a plastic grid molded over the membrane, the grid being similar to the sort of membrane applied to the bottom of multiwell plates, or hydrophobic strips. A fixed physical spacer is not preferred for imaging by exposure to flat phosphor-storage screens or x-ray films.

The present invention is illustrated in the following examples. Upon consideration of the present disclosure, one of skill in the art will appreciate that many other embodiments and variations may be made in the scope of the present invention. Accordingly, it is intended that the broader aspects of the present invention not be limited to the disclosure of the following examples. The present invention is not to be limited in scope by the exemplified embodiments which are intended as illustrations of single aspects of the invention, and compositions and methods which are functionally equivalent are within the scope of the invention. Indeed, numerous modifications and variations in the practice of the invention are expected to occur to those skilled in the art upon consideration of the present preferred embodiments. Consequently, the only limitations which should be placed upon the scope of the invention are those which appear in the appended claims.

All references cited within the body of the instant specification are hereby incorporated by reference in their entirety.

#### 5.0 EXAMPLES

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#### 5.1 EXAMPLE 1

# Novel Nucleic Acid Sequences Obtained From Various Libraries

A plurality of novel nucleic acids were obtained from cDNA libraries prepared from various human tissues and in some cases isolated from a genomic library derived from human chromosome using standard PCR, SBH sequence signature analysis and Sanger sequencing techniques. The inserts of the library were amplified with PCR using primers specific for the vector sequences which flank the inserts. Clones from cDNA libraries were spotted on nylon membrane filters and screened with oligonucleotide probes (e.g., 7-mers) to obtain signature sequences. The clones were clustered into groups of similar or identical sequences. Representative clones were selected for sequencing.

In some cases, the 5' sequence of the amplified inserts was then deduced using a typical Sanger sequencing protocol. PCR products were purified and subjected to fluorescent dye terminator cycle sequencing. Single pass gel sequencing was done using a 377 Applied Biosystems

(ABI) sequencer to obtain the novel nucleic acid sequences. In some cases RACE (Random Amplification of cDNA Ends) was performed to further extend the sequence in the 5' direction.

### 5.2 EXAMPLE 2

#### Novel Contigs

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The novel contigs of the invention were assembled from sequences that were obtained from a cDNA library by methods described in Example 1 above, and in some cases sequences obtained from one or more public databases. Chromatograms were base called and assembled using a software suite from University of Washington, Seattle containing three applications designated PHRED, PHRAP, and CONSED. The sequences for the resulting nucleic acid contigs are designated as SEQ ID NO: 1-1009 and are provided in the attached Sequence Listing. The contigs were assembled using an EST sequence as a seed. Then a recursive algorithm was used to extend the seed EST into an extended assemblage, by pulling additional sequences from different databases (i.e., Hyseq's database containing EST sequences, dbEST version 114, gb pri 114, and UniGene version 101) that belong to this assemblage. The algorithm terminated when there was no additional sequences from the above databases that would extend the assemblage. Inclusion of component sequences into the assemblage was based on a BLASTN hit to the extending assemblage with BLAST score greater than 300 and percent identity greater than 95%.

The nucleotide sequence within the assembled contigs that codes for signal peptide sequences and their cleavage sites was determined from using Neural Network SignalP V1.1 program (from Center for Biological Sequence Analysis, The Technical University of Denmark). The process for identifying prokaryotic and eukaryotic signal peptides and their cleavage sites are also disclosed by Henrik Nielson, Jacob Engelbrecht, Soren Brunak, and Gunnar von Heijne in the publication "Identification of prokaryotic and eukaryotic signal peptides and prediction of their cleavage sites" Protein Engineering, vol. 10, no. 1, pp.1-6 (1997) incorporated herein by reference,. A maximum S score and a mean S score, as described in the Nielson et al. reference, are obtained from each assembled contig. Table 3 sets forth the nucleotide range for each sequence of SEQ ID NO: 1-1009 that encodes a corresponding amino acid sequence containing the signal peptide sequence and its cleavage site: the maximum S score and the mean S score obtained for each sequence.

A signal peptide or leader peptide is usually a segment of about 15 to 30 amino acids at the N terminus of protein that enables the protein to be targeted to a cell membrane or secreted from a cell. Generally, the signal peptide acts as an export lable and is removed as the protein is secreted in its final form.

The nearest neighbor result for the assembled contig was obtained by a BLASTX version 2.01al 19 MP-Washington University search against Genpept release 120 and Geneseq database (October 12, 2000, update 21 (Derwent)), using BLAST algorithm. The nearest neighbor result showed the closest homologue for each assemblage from Genpept (and contains the translated amino acid sequences for which the assemblage encodes). The nearest neighbor results for SEQ ID NO: 1-1009 are shown in Table 2.

Tables 1, 2 and 3 follow. Table 1 shows the various tissue sources of SEQ ID NO: 1-1009. Table 2 shows the nearest neighbor result for the assembled contig. The nearest neighbor result shows the closest homolog with an identifiable function for each assemblage. Table 3 contains the start and stop nucleotides for the translated amino acid sequence for which each assemblage encodes. Table 3 also provides a correlation between the amino acid sequences set forth in the Sequence Listing, the nucleotide sequences set forth in the Sequence Listing and the SEQ ID NO. in USSN 09/491,404.

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TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ	SEQ ID NOS: OF NUCLEOTIDE(S)
110002 011011	INVA BOOKEB	LIBRARY	ong in Neb. of Nochholiph(5)
		NAME	
adult brain	GIBCO	AB3001	31 45 61 78 96 122 126 132 163
			169 171-172 175-176 181 203 212
			220 222 230 251-252 258 263 267 279 336 343 358 396 400-401 422
			428-429 431 437 456 464 487 503
			513 524 561 580 583 609 619 682
			812 946 958 965 980 983 989 999
adult brain	GIBCO	ABD003	5 23 26 28-29 31 34-36 61 74 78
			87 111-113 116 122-123 129 139
	,		143 148 159 163 167 175-176 178
			181 183 186 201-204 206 208-209
			212 214 220 222 228 230 234-235
			237 246 249-250 252 255 259 262-
			264 266-267 279-280 286 329 336
			351 358 379 396 422 429 431 437
			439 444-445 450 452 456 467-468
			479 484 503-504 507 513 523-524
			526 533 550 553 559 561-562 578 580 583 636 638 640 683 711 759
			764 769 772 799 803 824 830 842
			865 885 900 902 906 910 922-924
			932-933 941 945 951 955 958 965
			971 983-984 989 999 1005
adult brain	Clontech	ABR001	81 122 148 181 183 204 207 233
			237 250 267 301 346 394 396 437
			439 457 505 563 618 653 655 721
			764 795 885 942 949
adult brain	Clontech	ABR006	148 152 222 257 269 583 640 677
-4.15 basin	(2)	7777000	878
adult brain	Clontech	ABR008	2 10-11 13-14 19-20 23 28-29 34- 35 37 39-40 45 49-50 52 60 73-74
			78 83 87-91 94 98 101 109 114-117
			122-123 143 145 148-150 152 156
			162 168 173-178 181 183 187 189
			194 204 206-209 212 214-215 220-
			221 228 231 233-238 246-247 249-
			253 255-260 262 266 269-270 272
			276 278-281 284 294 301 313 316-
			320 335 337-338 343 363 372 379
			388 390-392 396 400-401 403 405-
			407 414 417 422-423 425 427-428
			433 437 441 443-446 452-453 456
			464 467 469 473-479 482 484 487-
· ·			488 491 497-498 500 502 504-505 507 519-520 523-526 533 544-545
			553 555-556 563 570-571 574-576
			578-580 583 615 618-619 637-638
			643-644 653 655-656 661 663 678
			680 689-690 695 699 702 705 717-
			718 720 722 725-726 742 746 752
			754-755 759 761 763-765 767 769
			772-774 776 784-789 792 795 799
			809-810 812 814-815 817 834 840
			842 844-846 852 855-856 858-860
			870-873 875 877 885-886 888 890-
			897 903-904 910 928 930-932 939-
			942 946-947 951-952 955 957 960
			964-965 967 971 975-976 978 986-
adult brain	Clontech	APPOTA	987 989 992 999 1001
adult brain	Clontech	ABR011	214 965

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY	SEQ ID NOS: OF NUCLEOTIDE(S)
ĺ		NAME	
adult brain	BioChain	ABR012	152 498
adult brain	Invitrogen	ABR013	142 207 254 396 442 498
adult brain	Invitrogen	ABT004	2 23 31 34 78 96 116 129 141 160
			176-177 181 183 202 214 231 233
			248 256 258-260 262 278 310 336-
			337 379 416 437 439 443-444 450 452 454 464 467 479 484 500 504
•			519 526 553 570 590 619 638 640
			647 653 655 678 711 759 764 789
			795 799 885 887 892 902 905 907
			910 915 922 941-942 955 960 989
			999
cultured	Strategene	ADP001	17 37 39 74 79 111 129 152 160
preadipocytes			200 222 248 252 268 274 358 385
			450 456 504 526 571 583 619 633
			640 740 803 816 829 842 887 939-
			940 965 973 977 986
adrenal gland	Clontech	ADR002	4 6 19 36 39 49 51-53 74 76 118
			122-123 147-148 152 156 160 167
			171-172 181 183 204 206 212 223-   224 228 233-234 246 249-250 254-
			255 262 274 278-279 284 287 294
			317 336 355 358 366 379 392 401-
		1	402 412 417 420 431-432 439 464
			470 479-480 484 503-504 506 509
			519 524 526-527 541 553 555 561
•			583 614 619 631 638 646 682 738-
			739 756 760 764 770 800 802-803
			816-817 838 847 852 863 881 887
			905-906 910 923 926 932 941 950-
adult heart	GIBCO	AHR001	951 989 999 1002 6 20 26 29 31 34 37 39 41 46 61
addit Heart	GIBCO	ANKOUI	74 78 101 114 116-118 122-124 128
	ĺ		145 147-148 152 155 163 175-176
			178 181 183 200 204 206 210 212
			215 228 230 234-235 237 246 248-
			252 255-256 262-263 266-268 272
			278 280 282-283 286 294 309 313
•			350-351 358 370 374 379 391-392
	}		394 397 400-401 409 420 423 431-
			432 434 436 438 441 443 452 455-
			456 461 467-468 479-480 484 487
			498 500 503 505 511 519 533 541 550 552-553 558 561-562 568 575
			583 590 597-598 603 619 636-638
			644-645 667-668 680 684 711-712
			714-715 723 732 750 789 803 805
			816 822 828 885 889 900 902 905
	1		908 910 916-917 923-924 932 935
			937 939 941 950 952 954 960 965
			974 982 984 987 993 1005
adult kidney	GIBCO	AKD001	4 13-14 19-20 23 26-31 37 39 47
			49 54 61 64 78 81 87 91 98 101
			114 118 122-123 127 129-130 141-
			143 145 148-149 155-158 160 163
			168 171-172 175-176 178-181 183
· ·			197-198 200 203-206 208 212 215
			221-222 228 230 234 237 241 245-   246 250-252 254-257 262-263 265-
	}		269 278-279 282-284 286 297 301
	1	<u></u>	202 210 213 202-204 200 231 301

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ	SEQ ID NOS: OF NUCLEOTIDE(S)
		LIBRARY	
		NAME	
			308 333 336 352-353 358 371-372
			379 381 386 391 394 396-397 400-   401 405 409 417 420 428-429 431
			,
			436-437 443 445 450 456 463-466
			468 475 479-480 484 487 495 498-
			499 503-505 507 511 513 517 523
			526 529 533 539 541-542 550 552- 553 555 561 570-572 575 577-578
			583 587 597 604 606 609 619 636
			638 640-642 648 680 682 701 706
			714 721 732 740 747 771 792 803
			805 809 811-812 829 838 842 862
			865 885 889 900 902 905-906 908
1			910-911 918-921 924 926 928-930
			937 939 941-942 950-951 953 955
			958 960 963 965 967 976 978-979
			982-984 1005
adult kidney	Invitrogen	AKT002	19 31 78 81 91 98-99 122 142 145
addic kiddey	Inviciogen	AKIUUZ	148 152 158 169 176 248 254 256
	<del>!</del>		262 266 279 296-297 301 321 353
,	1.		372 401 405 416 420 429-430 441
			456 464 498 504 507 523 526 533
			541 583 592-597 649 701 791 838
			862 868 911 926 933 946-947 958
		1	960 971
adult lung	GIBCO	ALG001	19 33 48 61 96 98 101 108 111 114
addit img	GIBCO	ALGUUI	145 148 179 183 194 198 200 205
			212 220 228 234 246 248 250-251
			254-255 263 268 277 279 289 298
			306 337 343 372 379-380 385 401
			405-406 408 410 420 431 440 443
			445 449 455 484 499 503 507 513
			517 571 590 597 617 636 640 714
			732 749-750 805 885 900 905 910
			918 941 955 958 960 977 980 1001
			1005
lymph node	Clontech	ALN001	43 48 53 108 123 136 142 147 160
		,	178 181 183 200 205 228 244 246
			250 254 268 270 291 379 399 419
			431 440 442 479-480 484 519 533
		1	539 553 559 565 583 616-617 619
			636 662 701 740 805 833 910 913
	]		928 941 977
young liver	GIBCO	ALV001	19 42 45 61 64 84 98 107 109 122-
			123 129-130 133 142 148 168-169
			178 181 183 200 205 207 227-229
			232 238 246-248 250 253-255 262-
	1		263 265 268 279 317 336 371 377
	1		392 400 410 431 436-437 443 445
			448-450 484 487 513 533 545 559
			561 570 578 617 632 638 640 648
			680 771 803 816 836-838 885 906
			926 940 986
adult liver	Invitrogen	ALV002	13-14 26 36 54 64 74 76 109 117
	_		122 179 181 183 187 204 215 221
			225 229 232 247-248 250 256-257
			275 304 307 315 317 321-322 371
		1	377 379 386 416 420 448-449 457
			464 475 479 481 483-484 504 507
		1	526 553 557 570 619 627-629 632
			•

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
			638 640 653 655 675 680 701 752 768 827 848 865 882 885 889 910 951 955 959 963 967 978 989 999- 1000
adult ovary	Invitrogen	AOV001	4 12 19 23 28-32 34-37 39 45 48 52 54 60-61 64-65 67 76 78 87 96 98-100 108 111-112 114 116-118 122-123 126 129-130 132-134 137 139 142-145 147-149 152 162-163 169-172 176 178 180-183 187 191- 192 197-202 204-206 212 214-217 219-222 228 234-235 237 242 246- 248 250-252 254-256 262 265-269 274 279-280 282-284 294 308-309 313 317 336-337 346 358 361 364 371 374 379 391-392 394 396-397 400 408 414 418 420 423 425 428- 429 431 435-437 440-441 443-447 450 452 455-459 463-464 467-468 479-480 484 487 492 495 499-500 503 505 512-513 517 519 524 533 539 545 553 555 557-559 561 565- 566 568 571 575 577-578 581 583 590 597 605 610 613 616-617 619 636 638 640 645-646 649-650 654 662 671 680 682 694 697 701 711 732 735 739-741 750 753 760 764 771 780 785 789 792 803 806 810 812 821 831-832 838 841-842 879 885 887 900 902 905-906 908-912 917 921-922 924 928 936-939 941- 942 946 950-952 957-958 960 962- 965 979 982 987 989 994 998-999 1005 1008
adult placenta	Clontech	APL001	122 148 168 181 194 200 248 262 268 317 436 541 561 803 838 911 971
placenta	Invitrogen	APL002	38 61 78-79 142 149 176 187 194 206 215 246 252 278 337 346 379 400 456 464 478-479 484 487 504 519 526 553 571 638 640 732 842 910-911 918 941 958
adult spleen	GIBCO	ASP001	23 26 39 43 48 61 63 78 87 98 108 110 123 136 142 157 176 178 181 183 197-198 201-202 205-206 213 220 222 228 234 237 244 250-252 254-255 257 263 294 305 320 336-337 354 358 371-372 376 379 397 400 405 410 414 431 437 440 455-456 484 487 498-499 504 506-507 511-512 519 523 526 529 533 539 550 561 565 572 575 583 586 597 616-617 619 621 636 640 687 701 713 732 740 748 803 812 816 835 910 930 939 946 956 958
testis	GIBCO	ATS001	20 23 29 61 64 76 114 123 126 143 145 148-149 175 178 182 200 203 206 209 235 248 252 257 263 268 279-281 283-284 333 358 371 391 396 400 418 423 431 438-439 441

TABLE 1

NAME	
445 456 479-480 4	)
508 516-517 521 5	
561-562 582 597 6 680 750 772 803 8	
914 937-938 950 9	1
adult bladder Invitrogen BLD001 23 37 77-78 84 16	·
215 218 248 252 2	
351 401 464 474 4	
663 692 729 908 9	
951 960 962	
bone marrow Clontech BMD001 19 31 39 43 48 52	2-53 95-96 98 100
108 111-112 114 1	117 122-123 136
141-142 144-145 1	147-149 152 161
163 169 181 183 1	
205 208 213 222 2	228 234 241-242
244-246 248-251 2	254-255 257 267
272 274 282 286 2	288-289 292 294
313 317 335 337 3	
363 365 374 379 3	
406 408 414 418 4	
442 444-445 456 4	
498-500 504 508 5	
533 539 541 553 5	
571 573 583 597 6	
640 646 649 651 6	1
709-710 721 734 7	
811 838 852 858 8	
982 985 989 991 9	
bone marrow Clontech BMD002 31 39 43 48 68 71	
134 136 142 148-1	
178 181 194 196 2	
246 254 262-263 2	
300 320 343 356 3	
408 413-414 430-4	
454 479 484 486 5	512-513 517 519
533 553 559 570 5	
634 637 651 674 6	592 793-794 800
803 818 852 880 9	904 910 930 936
941 950	
bone marrow Clontech BMD004 142 152 254 274	
adult colon Invitrogen CLN001 26 29 48 61 108-1	
176 194 215 221 2	,
450 498 511 533 5   706 764 905 939 9	
adult cervix BioChain CVX001 6 16 19-20 29 35	
75-76 86 92 96-98	
111 113 122 143 1	,
165 167 172 174 1	
200-201 206 222 2	
243 246 248 250-2	
265 268 270 274 2	
308 343 345 352 3	
400 409 420 423-4	
444 463-464 473 4	
505 508 510-512 5	
524 533 539 553-5	
,	:01 507 610 642
562 575 578 583 5	)
562 575 578 583 5 645-646 650 657 6	- I

TABLE 1

TISSUE ORIGIN	RNA SOURCE	IIIVORO	SEQ ID NOS: OF NUCLEOTIDE(S)
11330E ORIGIN	RNA SOURCE	HYSEQ LIBRARY	SEQ ID NOS: OF NOCLEOTIDE(S)
	1	NAME	
		TOPPING	910 926-927 933 937 941 960 963
		1	965 967-968 977 982 989 999 1008-
			1009
diaphragm	BioChain	DIA002	26 152 499 680
endothelial	Strategene	EDT001	13-14 19 23 26 30-32 34 39 67 73-
cells			74 76 78 91 101 109 114 116 118
		İ	129 145 149 152 156 160-161 167
			176 180 183 187 197 201 203-204
			206 209 215 222 226 228 230 237
		Į.	246 248 250-252 256-257 262 266
			276 279 282-283 286 309 312-313
			343 358 372 391-392 394 396 400-
			401 405 409 413 420 423 429-431
			436 438 443-445 450 455-456 479
			484 487 498-499 503 507 509 511
			513 523 561-562 571 575 583 619
			639 646 653 655 680 711 721 729
			739 771-772 775 779 795 803 805
			834 838-840 885 889 900 905-906
			911 917-918 922 924 930 942 946
Genomic clones			955 958 960 977-979 982-984
from the short	Genomic DNA from Genetic	EPM001	122 148 436
arm of	Research	•	
chromosome 8	Research	-	
Genomic clones	Genomic DNA	EPM003	122 148 379 436
from the short	from Genetic	BERIOUS	122 146 375 430
arm of	Research		
chromosome 8			
Genomic clones	Genomic DNA	EPM004	122 148 436
from the short	from Genetic		
arm of	Research		
chromosome 8			
Genomic clones	Genomic DNA	EPM005	148
from the short	from Genetic		
arm of	Research		
chromosome 8			
esophagus	BioChain	ESO002	152 178 583
fetal brain	Clontech	FBR001	122 148 181 279 284 484 553 575
			619 668 911
fetal brain	Clontech	FBR004	122 190 212 379 479 484 541 905
			922 924 941 950
fetal brain	Clontech	FBR006	2 23 31 36 39 42 44 49 52 78 87
	}		114 117 122-123 145 148 176-177
		i	180-181 187 204 208 210 215 220
			235 238-239 241 245-246 251 253
			256 259 266 270 278 280 286 314
	<u> </u>		317 337 372 379 392 396 400-401   405-406 410 414 423 428 439-440
			443 445 452 467 473 479 484 487
			491 497 500 504 517 519 524 526
			544 553 556 561 563 568 570-571
			573 577 586 619 647 653 655 664-
			665 680 739 742 746 754 766 772-
			776 784 795 798 834 840 842 863
			878 885 892-893 898-899 910 930
			941-942 946 952 965 971 976 987
•			993
fetal brain	Invitrogen	FBT002	19 31 34-35 44-45 78-79 87 96 101
			116 129 176 181 204 206 233 235
		L	

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
		NAME	256-257 259 262 278 280 317 320 337 380 396-397 401 437 443 446 450 453 464 480 484 498-499 504 526 577 591 619 640 664 680 697 710 764 900 902 905 910 958
fetal heart	Invitrogen	FHR001	500 910
fetal kidney	Clontech	FKD001	39 47 96 98 122-123 148 156 181
_			200 207 246 268 274 279 283 300
			379 411 445 464 468 479 484 506
			542 553 561 583 619 680 686 712
			747 910 941
fetal kidney	Clontech	FKD002	479 484 583 803 910 941
fetal kidney	Invitrogen	FKD007	864
fetal lung	Clontech	FLG001	64 96 143-144 168 194 206 234 266
		120002	335 337 363 500 507 561 619 968
fetal lung	Invitrogen	FLG003	3 13-14 55 61 79 122-123 148 160
	3		181 183 194 200 234 248 250 252
			266 268 273 289 294 336 358 428
			432 436 484 507 510 513-514 533
			541 557-558 582-583 597 671 711
			764 777 806 811 817 905 933 978
fetal lung	Clontech	FLG004	951
fetal liver-	Columbia	FLS001	13-15 19-21 23-26 28-30 32 34 37
spleen	University	120001	39 45 47-49 56 67 72-74 78 84 87
_	1		91 96-98 101 103-104 108 111 114
			116 122-123 126 129 131 133 142-
			145 147-149 151-152 156 160-161
			166 168-169 172 176 178-179 181
			183-185 192-194 197-202 204-206
	1		208 215 221-222 224 228-229 232
			234-235 237 246 248-252 254-257
			262 266-268 272 274 278-280 282-
			287 294 313 315 321 333 336-337
			343-344 358 372 377-379 386 391-
			393 397 400-402 404-405 409-410
		•	418 420-421 429 431 436-437 440-
			441 443 445 448-450 456-457 464
			473 475 478-481 483-484 487-488
		1	498 500 503 505 507 509 513 522-
			523 528 533-534 541 551 553 558
			560-562 564-565 570 575 577-578
			583 586 590 597 600 605-607 617
	J	1	619 632 636 638 640 644 646 672
			677-680 705 711 729 732 735-738
			740 742 748 760 763-764 771-772
			792 802-803 805-806 812 816-817
			820-821 824-827 834 838 842-843
			848 853 861 865 878 885 887 889
		· ·	900 902 904-906 908 910-911 917
			924 926 928 930 934 936-937 941
			944 946 950-951 955 958 960 963
			965 974-980 982-983 988-990 999
fetal liver-	Columbia	FLS002	4 8 12 15-16 18-21 23-24 26 32 37
spleen	University		39 47 54 61 64 67 71-72 74 76 79
	<b>-</b>		83-84 87 91 96-98 100-104 109
			111-113 122-123 129 133 141 145
			147-149 152 161 163 169 171-172
			174 178-181 183 185 187-188 192-
			195 198-202 205 207-209 213 215
			221-222 229 232 234-235 237 241
<del></del>			

TABLE 1

	DVA GOUDGE	Tryano	SEQ ID NOS: OF NUCLEOTIDE(S)
TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY	SEQ ID NOS: OF NOCLEOTIDE(S)
		NAME	
		NAME	244-246 248 250 262 265 267-268
			270 274 278-280 283-284 290 294
			300 311 313-315 317 331 337 341
			346 351-352 358 360-361 371-372
			377 382 391-393 397 399-401 404-
			405 410 414 425 429 431 436 440-
1			441 445-446 448-450 453 456 464
			473 475 479-480 487 492 498 500
			503-504 507 512 517 519 523 526
i '			540 557 561-563 565 574-575 577-
			578 583 590 597 605-606 608 611
			614 616 619 631-634 636-638 640
			646 649-650 662 671-673 676-678
			682 684 701-702 704-705 711 716
			732 735 748 760 762-764 768 771-
			772 779 790 802 805 815-816 834
i			
		1	838 842 848 865 878-879 883 887-
			889 903 905-906 910 916-917 922
1			924 928 930 939 944 946 950 955-
			956 958 960 965 975 977 982-983
			987-988 993-994 998 1004
fetal liver-	Columbia	FLS003	377 732 889 938
spleen	University		
fetal liver	Invitrogen	FLV001	23 29 39 84 109 194 208 221 232
	}	}	247-248 278 301 321 336-337 370-
	1		371 379 443 448-449 464 475 479-
			480 498 500 533 550 578 590 632
	-		636 640 678 680 683 751 763 8.03
	-		882-883 885 887-889 910 921 942
			946 951 963 988
fetal liver	Clontech	FLV004	37 122 200 232 268 274 377 583
			946
fetal muscle	Invitrogen	FMS001	29 37 41 64 66 74 148 164 200 202
lecar masere	Invictogen	112001	208-209 252 257 259 262 265 268
	į		274 279 337 346 379 445 480-481
1			505 507 553 555 561 571 606 640
	ļ		676 781 801 838 910 926 928 951
			957 960 963 965
fetal muscle	Invitrogen	FMS002	200 268 274
fetal skin	Invitrogen	FSK001	23 29 31 34 49 78 84 87 96 100
	1	'	112 116 133 143 148 163 168 172
			176-177 181 193 199-202 208 215
}		1	222 235 240 246 248 252 256-257
	1		262-268 274 280 282 294 309 314
			317 322 346 358 371 373-375 379
			414 417 419-420 436-437 441 445
			454 456 458 479-480 484 499-500
		1	504 507 513 519-520 526 533 539
			541 545-547 550 561 565 570-571
			575 577 583 590 598-599 619 644
			650 665 697 702 706 739 742 744
<u> </u>		i	
			784 790 792-793 812 816 861 877
		1	889 906 910 918 922 941 949 951-
			952 955 962 964-965 968 979 983
			987 989 999
fetal skin	Invitrogen	FSK002	200 257 265 268 274 513 688
fetal spleen	BioChain	FSP001	39 431 523 533 617
umbilical cord	BioChain	FUC001	19 28-29 34 39 74 96 99 101 111
			114 116 122 143 145 148 163 168
1		1	175 178 181 183 197 200 205 212

TABLE 1

TISSUE ORIGIN	DNA COUNCE	TRYONG	GDO TO MOS OF AFIST FOR THE
11330E ORIGIN	RNA SOURCE	HYSEQ	SEQ ID NOS: OF NUCLEOTIDE(S)
		LIBRARY	
		NAME	
			222 228 230 237-238 246 248 252-
			253 255 257 259 262 265 268-269
			272 274 282 325 351 379 396 400-
			401 413 429 441 443 445 452 456-
	·		457 467-468 479 484 487 505 513
*			517 519 523 533 541 553 555 561
			571 575 577 583 590 601-602 605-
			606 619 636 645 680 693 698 711
			757 759 764 803 814 816 821 853
: 			_ = ===
			885 889 900 906 908 910 924 926
1			932 937 941 943 946 951-952 955
			958 976 987 989 993-994 999
fetal brain	GIBCO	HFB001	13-14 19 26 29 31-32 39 44-45 61
1			67 74 78 88 100 114 122-123 126
			129 148 152 163 167 169 171-172
			175-176 180-181 187 201-204 206
			209 212 215 220 222 227-228 230
			233-235 237 246 249 251 258-259
			262-263 266 269 279-280 282 284
1			286 333 337 340 342 355 358 362
1			366 379 391 394-397 406 422-423
			428-429 431 436-437 443-446 450
			452 456 467-468 479-480 484 498
			504-505 513 517 523 526-527 533
		,	539 541 558-559 561-562 574 580
			583 605 619 635 638 643 680 682
			708 711 739-740 742 764 776 803
1		-	812 823 865 885 900 902 905 910
•			1014 043 003 003 003 900 904 905 910 1
			917 924 928 932 939 941 945 958
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TABLE 1

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lung tumor	Invitrogen	LGT002	13-14 19 31-32 34-39 43 48 64 67
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TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
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melanoma from cell line ATCC #CRL 1424	Clontech	MEL004	8 23 36 69 91 114 122-123 126 148 151 181 202 204 227 246 256-257 265 313 379 391 400 417 466 478- 479 487 496 519 521 523 561 570 583 590 669 728 764 784 838 842 910 941 950 965 970
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induced neuron cells	Strategene	NTD001	39 122 148 152 181 212 246 266 313 337 358 379 452 467 479 484 519 553 561 583 621-626 680 872 881 910 924 941
retinoid acid induced neuronal cells	Strategene	NTR001	37 148 152 168 541 583
neuronal cells	Strategene	NTU001	29 37 147 202 221-222 237 246 262 337 361 391 400 429 439 460 487 504 526 541 583 772 816 924 945 965
pituitary gland	Clontech	PIT004	391 396 764
placenta	Clontech	PLA003	123 183 544 803
prostate	Clontech	PRT001	60-61 76 96 122 145-148 153-154 175 178 183 201 204 226 228 235 237 241 245 248 250-251 256 262 265 280 284 324-325 337 397 400 409 436-437 456 464 478 480 487 489-490 492 508 516-517 524 552 561 583 605 722 740 747 849 889 906 924 926 939 958 974 1005
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TABLE 1

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			999
salivary gland	Clontech	SAL001	7 38 43 74 87 98 112 122 136 142
			148 162 169 181 183-185 207 215
ļ	1	1	228 235 250 254-255 265 280 349-
		.	350 394 437 443 464 508 515-516
			519 559 598 614 619 658 666-667
			680 724 762-763 771 803 816 842
			930 933-934 953
salivary gland	Claubach	CATCOS	48 108 515 617 900
	Clontech	SALS03	
skin	ATCC	SFB001	39
fibroblast			
skin	ATCC	SFB002	222 803
fibroblast	<u> </u>		
skin	ATCC	SFB003	237
fibroblast		}	·
small	Clontech	SIN001	16 19 29 39 48 56 65 73 96 108
intestine			122 136 148 152 155 160 162 165
		1	168 172 181 191 208 234 244 246
			266 282 296 379 394 431 440 443
			464 479-480 484 519 571 578 583
			617 619 648 662 694 703 752 763
		'	806 838 908 910 926 937 941 966
			972 976
skeletal	Clontech	SKM001	34 112 116 147 149 152 163 167
muscle	CIONCECH	SKMOOT	373 379 484 515 553 561-562 781
Muscre			838 910 941
animal cond	Glambaah	apaco1	
spinal cord	Clontech	SPC001 ·	19 22 29 31 55 58 70-71 78 122
			134 145 148 150 152 159-160 163
			166 171 175-176 183 200-201 203-
			204 220 222 224 235 237 246 248
			250 257 262 266-268 279-280 327-
J	1	1	328 330 337 343 346 371 379 389
			396 416 429-430 437 443 452-453
			456 467 475 479 493-494 498 500
	1		502 541 544 553 561 583 619 635-
			636 638 640 680 682 696 764 785
		1	900 902 910 941 950 982 994
adult spleen	Clontech	SPLc01	254 529 701
stomach	Clontech	ST0001	48 53 72 74 122 142 152 161 178
	1		181 200-202 204 208 240 251 254
[	1		265 268 309 347 397 410 437 512
			539 550 583 616 636 657 659 720
			722 921
thalamus	Clontech	THA002	35 53 78 114 123 156 176 181 228
CHATAMUS	CIONCECH	IMAUUZ	1
	1		235 246 252 255-256 265 280 329
			331 343 379 437 452 457 467 479
		1	484 496 507 519 553 571 593 619
			692 723 754 758 764 853 910 925
			941 950 967 981 1003
thymus	Clontech	THM001	29 78 112 122 148 151 160-161 169
			176 180-181 183 188 198 201 204-
			206 212 250 254 313 374 379 397
			412 429 437 446 453 471-472 484
		•	513 521 529 552-553 561 565 619
I	1	I	636 666 708 739 742 764 771 816
			1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ	SEQ ID NOS: OF NUCLEOTIDE(S)		
TIDOOB OKIGIN	KINA SOURCE	LIBRARY	SEQ ID NOS: OF NOCHEOTIDE(S)		
		NAME			
			838 910 941-942 944 947 958 969		
			979 982 989 999 1007		
thymus	Clontech	THMc02	9 19 32 36 63 67 74 78 80 85-86		
_			122-123 138 142 145 147-148 160-		
			161 169 175-176 181 183-184 187		
			194 198 202 204 208 211 238 244		
			246 250 252-254 257 262 265 270-		
			271 283-285 317 333 349 359-360		
			379 400-401 406 413 418 429 431		
			433 436 440-441 473 479 484 487		
			512-513 517-518 523 525 529 533		
			535-537 541 544 553 556 561 565		
ļ			567-570 572-573 578 583 615-619		
			636 644 660-661 681 683 687 698		
1			732 739 763-764 783 785 789 807-		
			808 811 816 842 852 864 868-869		
			900 904 906 910 924 926 930 938		
			941 965 968 974 979 992 1006-1007		
thyroid gland	Clontech	THR001	5 10 13-14 19 23 35 37 39 47 59-		
			61 64 74 79 87 100 110 112 117		
			122-123 133 141-142 145 148 152		
			156 160 168 181 187 199-202 204-		
			205 207-208 210 220 224-225 228		
			234-235 237 246-247 251-252 254-		
			256 262 265 267-268 280-281 284		
			286 301 308 325 332-333 335 337		
:			343 346 363 371 374 378-379 383		
		,	394 396-397 400 420 429 431-432		
			436 445 452 456 464 467-468 474		
			479-480 484 487 492 499 507 519 522 533 537 550 553 559 561 569		
			583 619 638 650 653 655 672 678		
			680 692 705 719 727 748 764 766-		
			767 769 792 797 816 821 854 906		
			910-911 921 924 926 928 941 946		
			951 958 960-961 967 971 974-975		
1			978 984 989 999		
trachea	Clontech	TRC001	43 48 108 112 142 148 168 204 208		
			212 221-222 254 265 282 286 317		
1			371 382 425 440 501 553 565 910		
uterus	Clontech	UTRO01	1 37 39 62 145 148 163 183 188		
			200 257 265 268 346 372 405 408		
			420 431 520 538 561-562 571 640		
			680 711 842 850-851 885 910 957		
L	_l				

TABLE 2

SEO ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	- 8
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE				SCORE	
1	AF208846	Homo sapiens	BM-004	172	43
2	Y53871	Homo sapiens	A human brain-	574	99
		_	derived signalling		
			factor polypeptide.		İ
3	AE003620	Drosophila	CG8486 gene product	112	33
		melanogaster		[	
4	AF193807	Homo sapiens	Rh type B	1204	96
			glycoprotein		
5	Y87156	Homo sapiens	Human secreted	89	46
		<u> </u>	protein sequence		]
			SEQ ID NO:195.		
6	Y71062	Homo sapiens	Human membrane	135	30
			transport protein,		
			MTRP-7.		ľ
7	AB047936	Macaca	hypothetical	81	38
		fascicularis	protein		
. 8	Y36156	Homo sapiens	Human secreted	158	68
			protein #28.		
9	AB040964	Homo sapiens	KIAA1531 protein	495	100
10	U29725	Homo sapiens	BMK1 alpha kinase	114	35
11	X00822	Gallus gallus	collagen type III	54	52
12	Y27868	Homo sapiens	Human secreted	119	43
			protein encoded by		İ
			gene No. 107.		
13	W74813	Homo sapiens	Human secreted	722	92
			protein encoded by		1
			gene 85 clone		ŀ
			HSDFV29.		
14	W74813	Homo sapiens	Human secreted	722	92
			protein encoded by		
			gene 85 clone		1
		<u></u>	HSDFV29.	222	
15	AF119851	Homo sapiens	PRO1722	333	70
16	AF264750	Homo sapiens	ALR-like protein	133	100
17	X91014	Mus musculus	alpha 1 type XI	131	72
10	77000000	<b> </b>	collagen PRO0478	109	90
18	AF090930	Homo sapiens		1	1
19	¥86456	Homo sapiens	Human gene 46-	618	95
			encoded protein fragment, SEQ ID		
20	AF084535	Home designs	NO:371.	1809	100
		Homo sapiens	l		
21	Y27585	Homo sapiens	Human secreted	587	98
		}	protein encoded by		Ì
22	760745	George Paladari	gene No. 19.	214	37
22	268748	Caenorhabditi	Similairity to	214	37
		s elegans	Yeast hypothetical		i
		1	protein YEH4		
			(SW:YEH4_YEAST)~cDN		
		1	A EST yk87c11.3		
ĺ			comes from this		
	1		gene~cDNA EST		
L	<u> </u>	<u> </u>	yk87c11.5 comes	<u> </u>	<b>L</b>

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	ે કે
OF	NUMBER	0120220		WATERMAN	IDENTITY
NUCLEOTIDE		ļ		SCORE	
	<del> </del>	<del> </del>	from this gene-cDNA		
			EST yk497d5.3 comes		
			from this gene~cDNA		
			EST yk186a5.5 comes		]
			from this gene~cDNA		,
			EST yk243b10.5		
			comes from this		
			gene~cDNA EST		
	1		yk497d5.5 comes		
•			from this gene		
23	D86973	Homo sapiens	similar to Yeast	12053	100
		_	translation		
			activator GCN1		
			(P1:A48126)		1
24	Y09945	Rattus	putative integral	458	50
		norvegicus	membrane transport		
			protein		}
25	U25739	Mus musculus	YSPL-1 form 1	719	77
26	AK024427	Homo sapiens	FLJ00016 protein	668	100
27 ·	AP001707	Homo sapiens	human gene for	603	100
			claudin-8,		
			Accession No.		
			AJ250711		
28	U16030	Brugia malayi	cuticular collagen	78	37
			Bmcol-2		
29	G02479	Homo sapiens	Human secreted	442	100
			protein, SEQ ID NO:	1	
			6560.		
30	Y13375	Homo sapiens	Amino acid sequence	1806	99
			of protein PRO262.		
31	AF077226	Homo sapiens	copine III	1757	65
32	W75198	Homo sapiens	Human secreted	208	100
			protein encoded by		
			gene 3 clone		
			HCEDO84.		
33	AF151978	Homo sapiens	amino acid	3436	100
			transporter B0+		
34	Y66735 .	Homo sapiens	Membrane-bound	1006	100
			protein PRO1153.	<u> </u>	
35	AC003093	Homo sapiens	OXYSTEROL-BINDING	764	60
	ļ	j	PROTEIN; 45%		
			similarity to		
			P22059		
			(PID:g129308)		
36	AF286861	Fasciola	tegumental antigen-	79	30
		hepatica	like protein		
37	AF201945	Homo sapiens	HNOEL-iso	2152	100
38	AF258465	Homo sapiens	OTRPC4	1668	99
39	AF173003	Homo sapiens	apoptosis regulator	2421	100
40	Y53023	Homo sapiens	Human secreted	128	41
			protein clone		
			qf662_3 protein		!
			sequence SEQ ID	]	

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	ક
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
			NO:52.		· · · · · · · · · · · · · · · · · · ·
41	M25750	Oryctolagus	sarcolumenin	2307	97
		cuniculus	precursor	İ	
42	G03797	Homo sapiens	Human secreted protein, SEQ ID NO: 7878.	186	75
43	X57805	Homo sapiens	immunoglobulin lambda light chain	1102	91
44	AE003689	Drosophila melanogaster	CG4596 gene product	419	44
45	Y50934	Homo sapiens	Human fetal brain cDNA clone vc30_1 derived protein #1.	644	100
46	Y19562	Homo sapiens	Amino acid sequence of a human secreted protein.	80	45
47	AF016272	Homo sapiens	Ksp-cadherin	4263	99
48	R13111	Homo sapiens	1B1 IgG aberrant light chain with duplicated variable region.	1000	92
49	AK001636	Homo sapiens	unnamed protein product	1630	97
50	Y65155	Homo sapiens	Human 5' EST related polypeptide SEQ ID NO:1316.	78	34
51	G00471	Homo sapiens	Human secreted protein, SEQ ID NO: 4552.	281	91
52	AJ272050	Homo sapiens	transcription initiation factor IA protein	165	68
53	Y42388	Homo sapiens	Amino acid sequence of pt127_1.	668	73
54	AF193807	Homo sapiens	Rh type B glycoprotein	248	97
55	AF132611	Homo sapiens	monocarboxylate transporter MCT3	139	37
56	U43940	Rattus norvegicus	focal adhesion kinase	141	84
57	L17318	Rattus norvegicus	proline-rich proteoglycan	124	37
58	G02832	Homo sapiens	Human secreted protein, SEQ ID NO: 6913.	132	48
59	G00357	Homo sapiens	Human secreted protein, SEQ ID NO: 4438.	95	64
60	¥12723	Homo sapiens	Human 5' EST secreted protein SEQ ID NO:313.	91	50
61	Y19450	Homo sapiens	Amino acid sequence of a human secreted	406	100

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
<del></del>			protein.		
62	AF156549	Mus musculus	putative E1-E2 ATPase	876	65
63	AL356276	Homo sapiens	bA367J7.5 (novel	655	84
			Immunoglobulin		1.
			domain containing		
			protein)		
64	AL133105	Homo sapiens	hypothetical protein	1783	99
65	U32189	Oryctolagus	histidine-rich	73	40
		cuniculus	glycoprotein		
			precursor		
66	Y91433	Homo sapiens	Human secreted	758	98
			protein sequence		
		İ	encoded by gene 33		
		ļ .	SEQ ID NO:154.		
67	W75198	Homo sapiens	Human secreted	208	100
			protein encoded by	1	
			gene 3 clone		
			HCEDO84.		
68	AF020651	Homo sapiens	T cell receptor	742	93
			alpha chain	1	
			variable region		
69	AF118086	Homo sapiens	PRO1992	158	61
70	X52454	Drosophila melanogaster	rho	224	36
71	W40353	Homo sapiens	Human unspecified	146	67
		•	protein from		] -
			US5702907.	1	
72	Y66690	Homo sapiens	Membrane-bound	971	98
			protein PRO813.		ł
73	AJ002744	Homo sapiens	UDP-	1518	98
			GalNAc:polypeptide		
			N-		
			acetylgalactosaminy		
			ltransferase 7		
74	AC024792	Caenorhabditi	contains similarity	423	36
		s elegans	to TR:P78316		
75 76	AB016088	Homo sapiens	RNA binding protein	109	32
76	Y94953	Homo sapiens	Human secreted	2484	100
			protein clone	İ	
			fy356_14 protein		
			sequence SEQ ID		
77	AF107406	Homo sapiens	NO:112. GW128	74	51
78	Y13401	Homo sapiens	Amino acid sequence	1681	96
		"Outo papiens	of protein PRO339.	1001	70
79	Y94290	Homo sapiens	Human myosin heavy	1819	99
	L		chain homologue.		
80	AF007194	Homo sapiens	mucin	4875	100
81	AF229179	Homo sapiens	kidney-specific	949	99
		}	membrane protein	1	
			NX-17		

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	e F
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
82	AL356173	Neurospora	hypothetical	83	29
		crassa	protein		
83	G00437	Homo sapiens	Human secreted	87	69
		_	protein, SEQ ID NO:		
			4518.		1
84	K03036	Mus musculus	alpha-1 type I	114	38
			procollagen		
85	AF233261	Homo sapiens	otoraplin ·	676	100
86	AF073519	Homo sapiens	small EDRK-rich	100	45
			factor 1, long	}	}
			isoform		
87	AC021640	Arabidopsis	putative	387	43
		thaliana	phosphatidate		
			phosphohydrolase	į	
88	AB040812	Homo sapiens	protein kinase PAK5	1159	100
89	AL365409	Homo sapiens	similar to	694	100
		,	(NP 034322.1 ) sex-	1	
			determination		
			protein homolog		
			Femla	Ì	
90	U81035	Rattus	ankyrin binding	189	63
	002000	norvegicus	cell adhesion	100	03
		nor vegreus	molecule	1	1
ŀ	}		neurofascin		ł
91	W88684	Homo sapiens	Secreted protein	134	65
		nomo bapiens	encoded by gene 151	134	03
	1		clone HNHED86.		1
92	Y66734	Homo sapiens	Membrane-bound	297	70
		1.0	protein PRO1097.	] = - '	1.0
93	AB031051	Homo sapiens	organic anion	283	40
-	1.20022002	Indino Baptonia	transporter OATP-E	200	•
94	B08976	Homo sapiens	Human secreted	71	27
J-1	1 2003 70	nomo bapiena	protein sequence	1.74	- '
	1		encoded by gene 28		
			SEQ ID NO:133.		
95	U83115	Homo sapiens	non-lens beta	245	97
,,	003113	nomo suprems	gamma-crystallin	243	' '
			like protein	1	i
96	AF156551	Mus musculus	putative E1-E2	3779	86
50	120331	ababcazab	ATPase	3,7,5	00
97	AF062476	Mus musculus	retinoic acid-	1091	74
<i>J</i> ,	AF 002470	Plus musculus	responsive protein;	1031	/ -
			STRA6	1	}
98	Y87072	Homo sapiens	Human secreted	490	100
<b>J</b> 0	10/0/2	TOUG Sabrens	protein sequence	1 30	100
	1		SEQ ID NO:111.		
99	AP116652	Homo ganian-	,	1015	00
	AF116652	Homo sapiens	PRO0813	1015	99
100	AF159567	Homo sapiens	C2H2 (Kruppel-type)	2176	100
101	D25222	772-0-2-1-1-1	zinc finger protein	1.00	<del> </del>
101	D25328	Homo sapiens	platelet-type	109	95
		ļ	phosphofructokinase		
102	AB018563	Homo sapiens	TML1	98	68
103	X83107	Homo sapiens	bmx	232	85

78.5

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE			]	SCORE	
104	U49973	Homo sapiens	ORF1; MER37;	131	43
		• 7	putative		
			transposase similar		
			to pogo element		
105	Y86472	Homo sapiens	Human gene 52-	150	54
		£	encoded protein		
			fragment, SEQ ID		
		,	NO:387.		
106	AF020276	Homo sapiens	spinocerebellar	96	37
			ataxia 7	- 0	1 -
107	W57901	Homo sapiens	Protein of clone	1499	96
			CT748 2.	1 223	-0
108	R13111	Homo sapiens	1B1 IgG aberrant	1210	84
		nome suprems	light chain with	1210	0-1
			duplicated variable		
			region.		
109	W50192	Homo sapiens	Amino acid sequence	95	32
105	. 1130132	nomo saprens	of salivary protein	35	32
			CON-1.		1
110	AB046634	Macaca	hypothetical	282	75
110	MD04003#	fascicularis	protein	202	/3
111	AF242432	Mus musculus	neuronal apoptosis	486	29
***	MF242432	Mus muscurus		486	29
			inhibitory protein		
112	AB000280	Rattus	<u> </u>	2400	-
112	AB000280	norvegicus	peptide/histidine	2490	88
113	AF182443	Rattus	ransporter F-box protein FBL2	597	
773	AF102443	norvegicus	F-box procein FBL2	1 29 /	99
114	AJ245874	Homo sapiens	putative ATG/GTP	1242	100
114	A0243074	nomo saptens	binding protein	1242	100
115	AF179828	Saimiri	olfactory receptor	444	66
113	AF1/3026	sciureus	orractory receptor	444	06
116	Y66735	Homo sapiens	Membrane-bound	1006	100
110	100/33	Homo saptens	protein PRO1153.	1006	100
117	¥94344	Ylama gandaina	Human cell surface	200	
11/	194344	Homo sapiens		892	90
			receptor protein #11.		
118	AJ238706	December 1	_ ·· = - · ·	-	
110	AU238706	Drosophila	monocarboxylate	226	31
		melanogaster	transporter 1		
110	77700000	5	homologue		
119	AF180728	Drosophila	sulfate transporter	312	45
		melanogaster			
120	AE004890	Pseudomonas	L-lactate permease	534	89
101	<u> </u>	aeruginosa			<u> </u>
121	X91837	Saccharomyces	cell division cycle	435	98
		cerevisiae	protein CDC55		
122	T93565	Homo sapiens	putative p150	1911	90
123	AJ000332	Homo sapiens	Glucosidase II	5043	99
124	AF204674	Homo sapiens	muscle disease-	377	72
			related protein		
125	S58722	Homo sapiens	X-linked	196	68
			retinopathy protein		
	1 .		{C-terminal, clone	1	I

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	1 2
OF	NUMBER	0.20120		WATERMAN	IDENTITY
NUCLEOTIDE				SCORE	1 IDENTITI
		<del> </del>	XEH.8c}	- 3001.2	
126	S58722	Homo sapiens	X-linked	196	68
120	530722	liono papacina	retinopathy protein	150	00
			{C-terminal, clone		1
	}		XEH.8c}		
127	J03848	Mesocricetus	metallothionein II	147	51
121	003040	auratus	metallothionein ii	14' .	31
128	G02994	Homo sapiens	Human secreted	93	64
128	G02994	HOMO Sapiens		93	64
			protein, SEQ ID NO:		(
		ļ. <u></u> .	7075.		
129	AF116238	Homo sapiens	pseudouridine	1927	99
·			synthase 1		
130	G03411	Homo sapiens	Human secreted	183	65
			protein, SEQ ID NO:	-	
			7492.		
131	AF222861	Sus scrofa	type X collagen	90	34
132	G03628	Homo sapiens	Human secreted	60	66
			protein, SEQ ID NO:		
			7709.		
133	Y10529	Homo sapiens	olfactory receptor	766	61
134	AF164612	Homo sapiens	Gag protein	125	43
135	Y12713	Mus musculus	Pro-Pol-dUTPase	181	47
			polyprotein		
136	X57816	Homo sapiens	immunoglobulin	550	57
		1	lambda light chain		
137	U07808	Mus musculus	metallothionein IV	55	37
138	AB031227	Pisum sativum	PsAD1	68	50
139	AB035520	Oryctolagus	parchorin	1324	57
		cuniculus	Par		] "
140	AB007891	Homo sapiens	KIAA0431	117	46
141	Y00278	Homo sapiens	Human secreted	234	92
T-1-	100270	nomo saprens	protein encoded by	234	32
			gene 21.	ì	
142	Y68810	Homo sapiens	A rat heavy chain	1124	92
142	100010	nomo sapiens	region and a human	1124	92
I :		Į.	hinge region.	l	
143	M58526	Homo sapiens	alpha-5 type IV	1.505	L
143	M28276	Homo sapiens		4597	97
377	1 2011 0011		collagen PRO1722		
144	AF119851	Homo sapiens		192	66
145	X84908	Homo sapiens	phosphorylase	3798	97
			kinase		
146	Y76155	Homo sapiens	Human secreted	81	52
		1	protein encoded by		
			gene 32.		
147	U13766	Murine .	gag-pol polyprotein	735	36
		leukemia			·
	l	virus			
148	AF034198	Homo sapiens	IGSF1	7154	100
149	Y94343	Homo sapiens	Human cell surface	1331	100
		· -	receptor protein		
		1	#10. Human secreted	,	

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	ક
OF	NUMBER		·	WATERMAN	IDENTITY
NUCLEOTIDE		}	·	SCORE	
			protein sequence		<del></del>
			SEQ ID NO:250.		
151	AJ252258	human	glycoprotein G-2	1.15	30
		herpesvirus 2			
152	V00662	Homo sapiens	URF 1 (NADH	1283	85
			dehydrogenase		
			subunit)	l ,	
153	G02872	Homo sapiens	Human secreted	142	61
			protein, SEQ ID NO:		
			6953.		
154	A23786	Beta vulgaris	chitinase 1	138	41
155	Z34465	Zea mays	extensin-like	97	36
			protein		
156	X79389	Homo sapiens	glutathione	721	66
			transferase Tl	<u> </u>	
157	M22333	Homo sapiens	unknown protein	106	46
158	AL118502	Homo sapiens	bA371L19.1 (novel	2471	100
			protein)		
159	AJ012582	Homo sapiens	hyperpolarization-	3076	100
1			activated cation	-	
7.50	705253		channel HCN2		
160	D26351	Homo sapiens	human type 3	8901	99
			inositol 1,4,5-		
*			trisphosphate		ļ
161	AF067656		receptor	053	
101	AF06/656	Homo sapiens	ZW10 interactor Zwint	951	97
162	AE003461	Drosophila	CG11300 gene	76	
102	WE003461	melanogaster	product	/"	29
163	Y48518	Homo sapiens	Human breast	355	100
103	140318	nomo saprens	tumour-associated	333	100
			protein 63.	1.	}
164	G00517	Homo sapiens	Human secreted	83	34
	000027	nomo supremo	protein, SEQ ID NO:	103	34
	· ·		4598.		1
165	G03786	Homo sapiens	Human secreted	251	53
			protein, SEQ ID NO:		33
			7867.		
166	Y00765	Homo sapiens	Prion protein CJAS.	63	37
167	Y21050	Homo sapiens	Human glial	206	71
			fibrillary acidic		
			protein GFAP mutant		
		1	fragment 59.		,
168	X74929	Homo sapiens	Keratin 8	1462	95
169	U29488	Caenorhabditi	similar to DNAJ	555	29
		s elegans	protein		
170	L27428	Homo sapiens	reverse	145	45
		1	transcriptase		
171	W19932	Homo sapiens	Alzheimer's disease	362	100
			protein encoded by		
	1		DNA from plasmid		ļ
			pGC\$55.	, i	
172	AF178983	Homo sapiens	Ras-associated	497	100
		**************************************		J.,	<u> </u>

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
			protein Rapl		<del></del>
173	U70136	Homo sapiens	megakaryocyte stimulating factor; MSF	206	28
174	G00352	Homo sapiens	Human secreted protein, SEQ ID NO: 4433.	109	64
175	U28143	Gallus gallus	synemin	1014	39
176	Y13401	Homo sapiens	Amino acid sequence of protein PRO339.	1978	96
177	AJ243396	Homo sapiens	voltage-gated sodium channel beta-3 subunit	947	99
178	M77812	Oryctolagus cuniculus	myosin heavy chain	4079	98
179	AF200344	Homo sapiens	aspartyl protease 3	956	91
180	AF200815	Homo sapiens	FUSED serine/threonine kinase	1597	99
181	G03786	Homo sapiens	Human secreted protein, SEQ ID NO: 7867.	147	83
182	Y00313	Homo sapiens	Human secreted protein encoded by gene 56.	56	29
183	X00699	Homo sapiens	precursor	583	66
184	AF269289	Homo sapiens	unknown	81	32
185	G03797	Homo sapiens	Human secreted protein, SEQ ID NO: 7878.	176	66
186	Y20298	Homo sapiens	Human apolipoprotein B mutant protein fragment 11.	110	34
187	AF161437	Homo sapiens	HSPC319	867	99
188	¥19684	Homo sapiens	SEQ ID NO 402 from WO9922243.	124	47
189	¥74050	Homo sapiens	Human prostate tumor EST fragment derived protein #237.	78	42
190	Y08986 ,	Brassica napus	oleosin-like protein	106	36
191	AF119851	Homo sapiens	PRO1722	173	66
192	AF116712	Homo sapiens	PRO2738	166	50
193	AF186084	Homo sapiens	epidermal growth factor repeat containing protein	2022	85
194	M59819	Homo sapiens	granulocyte colony- stimulating factor receptor	4232	100
195	Y86228	Homo sapiens	Human secreted protein HFXJX44,	250	100

120

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	ું જ
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE				SCORE	
·			SEQ ID NO:143.		
196	Y45382	Homo sapiens	Human secreted	181	63
			protein fragment encoded from gene	,	
			28.		
197	X94991	Homo sapiens	zyxin	566	41
198	M17236	Homo sapiens	MHC HLA-DQ alpha	896	84
130	1117230	Inclino Bupicino	precursor		
199	AC004659	Homo sapiens	BC62940 2	805	53
200	X14420	Homo sapiens	prepro-alpha-1 type	5521	99
		_	3 collagen		
201	AF180473	Homo sapiens	Not2p	1628	98
202	XB5237	Homo sapiens	human splicing	1145	100
			factor		
203	AL390114	Leishmania	extremely	309	58
		major	cysteine/valine		
204	D40130	77	rich protein	1479	98
204	D42138 Y00062	Homo sapiens Homo sapiens	precursor	3334	98
205	100062	HOMO Sapiens	polypeptide (AA -23	3334	)
			to 1120)		
206	W93946	Homo sapiens	Human regulatory	1011	100
			molecule HRM-2		
			protein.		·
207	AB017563	Homo sapiens	IGSF4	2062	99
208	X54637	Homo sapiens	protein tyrosine kinase	5694	98
209	AF255910	Homo sapiens	vascular	1508	98
			endothelial		
			junction-associated		
0.0	3 2001 200	<u></u>	molecule	7545	
210	AF061324	Homo sapiens	sulfonylurea receptor 2A	/545	97
211	U93568	Homo sapiens	p40	197	50
212	AF250842	Drosophila	multiple asters	506	32
	-11 233044	melanogaster			
213	X81479	Homo sapiens	EMR1	4469	99
214	X77748	Homo sapiens	metabotropic	4471	99
		_	glutamate receptor		
	1	<u> </u>	type 3 (mGluR3)		
215	M60396	Homo sapiens	transcobalamin II	2218	99
216	W48351	Homo sapiens	Human breast cancer	170	71
1			related protein		
	1,77,6062		BCRB2. Human secreted	1.50	
217	¥36203	Homo sapiens	protein #75.	156	73
218	AF119851	Homo sapiens	PRO1722	144	63
219	AJ246002	Mus musculus	spastin protein	143	100
	2000	1145 MASCALAS	orthologue		1 -00
220	D49958	Homo sapiens	membrane	616	57
			glycoprotein M6		
221	X83573	Homo sapiens	ARSE	2114	93

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	<u> </u>
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE			1	SCORE	
222	AF126062	Homo sapiens	Arf-like 2 binding	508	84
		-	protein BART1		
223	L22695	Canine oral	5' end derived by	83	51
		papillomaviru	splicing; putative		
		s			
224	R95913	Homo sapiens	Neural thread	262	64
			protein.		"
225	AP001306	Arabidopsis	contains similarity	79	34
		thaliana	to cell wall-plasma	' '	34
•			membrane linker		1
			protein-gene id:MKA		
			23.3		1
226	G01984	Homo sapiens	Human secreted	252	64
		Jacano Supromo	protein, SEQ ID NO:		0 2
			6065.		
227	X04614	human	IB110	83	35
22,	NO4014	herpesvirus 1	12210	"	33
228	AF151877	Homo sapiens	CGI-119 protein	1203	94
229	AF181467	Homo sapiens	protein Z-dependent	1483	88
227	AF 101407	nomo saprens	protein 2-dependent protease inhibitor	1403	°°
			precursor		
230	Z81326	Homo sapiens	neuroserpin	1763	99
231	AF111173	Homo sapiens	sodium/hydrogen	3512	99
231	AFILLI/3	Homo saptens	exchanger isoform 5	3512	1 99
232	X67055	Homo sapiens	inter-alpha-trypsin	4429	98
232	A6 /033	HOMO Sapiens	inhibitor heavy	4429	98
			chain H3		
233	AB004064	Homo sapiens	L	1783	98
234	AL096772	Homo sapiens	tomoregulin		
234	AL096772	Homo sapiens		5465	98
235	X83378	IIoma conicae	(KIAA0758 protein)	1.600	
235	A83378	Homo sapiens	putative chloride channel	1620	99
236	20042644				
236	AF043644	Homo sapiens	receptor protein	5127	97
			tyrosine		
237	AF208536	Homo sapiens	phosphatase nucleotide binding	1370	7.00
231	AF200536	nomo saprens		1372	100
238	7.0005605	77	protein; NBP	1	
	AC005625	Homo sapiens	l	2435	93
239	X55687	Lycopersicon	extensin (class II)	58	50
	100000	esculentum			
240	M23315	Sesbania	nodulin	61	36
		rostrata		ļ <u>.</u>	
241	AF102851	Homo sapiens	dolichyl-P-	1881	99
			Glc:Man9GlcNAc2-PP-	į	
			dolichyl		]
	L	<u> </u>	glucosyltransferase		
242	G03793	Homo sapiens	Human secreted	202	67
			protein, SEQ ID NO:		
<u>.                                    </u>			7874.		
243	G03258	Homo sapiens	Human secreted	203	69
			protein, SEQ ID NO:		
			7339.		
244	AF048774	Homo sapiens	anti-HER3 scFv	903	81

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	90
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE				SCORE	}
245	AF102851	Homo sapiens	dolichyl-P-	1867	98
			Glc:Man9GlcNAc2-PP-		-0
			dolichyl		
			glucosyltransferase		
246	L00352	Homo sapiens	low density	3980	100
			lipoprotein	1 3200	1 200
			receptor		
247	Y79510	Homo sapiens	Human carbohydrate-	1394	100
2.1,	1,3310	nomo Bapzens	associated protein	1334	1 = 00
			CRBAP-6.		
248	AF202636	Homo sapiens	angiopoietin-like	2164	100
240	AF202036	Homo saptems	protein PP1158	2104	100
249	X66533	Homo sapiens	guanylate cyclase	1641	97
250	<u> </u>	1	MHC HLA-DR-beta-2	750	
430	M20504	Homo sapiens		'50	70
0.51	78153306	Tioma a	precursor	4070	100
251	AF157326	Homo sapiens	TIP120 protein	4278	99
252	M25865	Homo sapiens	von Willebrand	10841	95
252	7.0005505		factor	1 2435	
253	AC005625	Homo sapiens	R27328_1	2435	93
254	A21385	synthetic	heavy chain	1786	94
		construct	antibody 3D6		
255	AF182414	Homo sapiens	MDS013	310	48
256	Y54041	Homo sapiens	Protein encoded by	1267	84
	1		a gene reduced in		
			metastatic melanoma		
	<u>                                     </u>		cells (grmm-1).	l	
257	AJ011415	Homo sapiens	plexin-B1/SEP	1580	60
			receptor		
258	W55030	Homo sapiens	G-protein coupled	1493	100
			receptor, long		
			form.		l
259	AF227747	Homo sapiens	voltage-dependent	6158	100
			calcium channel		
			alpha 1G subunit		
			isoform bc		
260	AF111173	Homo sapiens	sodium/hydrogen	3512	99
		<u> </u>	exchanger isoform 5		
261	G01984	Homo sapiens	Human secreted	175	70
	į		protein, SEQ ID NO:		
			6065.	ļ	
262	Y00815	Homo sapiens	put. LAR preprotein	5648	100
			(AA -16 to 1881)		
263	Z34979	Homo sapiens	Human FIZZ3	582	100
			(inhibitor of		
			neurotrophin		1
			action) cDNA.		1
264	AF119851	Homo sapiens	PRO1722	189	73
265	AL049798	Homo sapiens	dJ797M17.1	1007	99
		_	(Dermatopontin)		
266	AL035684	Homo sapiens	dJ1114A1.1	1978	99
		-	(KIAA0611 (putative		
			E1-E2 ATPase)		
	1		protein)		
	<u></u>	<u> </u>	1.		L

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
267	U49055	Rattus norvegicus	rA8	4382	87
268	X15332	Homo sapiens	alpha-1 (III) collagen	4170	99
269	Z98884	Homo sapiens	dJ467L1.1 (KIAA0833)	2010	100
270	AF085244	Homo sapiens	C2H2 type Kruppel- like zinc finger protein splice variant b	7331	98
271	Y00319	Homo sapiens	Human secreted protein encoded by gene 63.	214	82
272	X04434	Homo sapiens	IGF-I receptor	5832	99
273	AC005626	Homo sapiens	R29124_1	1129	89
274	X52046	Mus musculus	type III collagen	819	37
275	M22207 .	Tripneustes gratilla	217g protein	168	51
276	M32317	Homo sapiens	HLA protein allele B7	1536	84
277	L05485	Homo sapiens	surfactant protein D	1693	87
278	W88504	Homo sapiens	Human epidermoid carcinoma clone HP10428-encoded membrane protein.	1187	100
279	AF078850	Homo sapiens	steroid dehydrogenase homolog	794	100
280	X83378	Homo sapiens	putative chloride channel	1620	99
281	AL035701	Homo sapiens	dJ8B1.3 (similar to PLASMA-CELL MEMBRANE GLYCOPROTEIN PC-1)	2412	99
282	Y87068	Homo sapiens	Human secreted protein sequence SEQ ID NO:107.	528	100
283	L40806	Neurospora crassa	Restriction enzyme inactivation of met-10 complementation in this region. Sequence similarity to S. cerevisiae chromosome VIII cosmid 9205, accession no. U10556 CDS residues 22627-24126	536	35
284	W88552	Homo sapiens	Secreted protein encoded by gene 19 clone HSAVU34.	3078	99

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH- WATERMAN SCORE	% IDENTITY
285	G03790	Homo sapiens	Human secreted protein, SEQ ID NO: 7871.	108	50
286	X68060	Homo sapiens	DNA topoisomerase	8296	99
287	G00352	Homo sapiens	Human secreted protein, SEQ ID NO: 4433.	114	41
288	AC004602	Homo sapiens	F23487 2	202	49
289	AF196329	Homo sapiens	triggering receptor expressed on monocytes 1	1211	99
290	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	202	62
291	G03043	Homo sapiens	Human secreted protein, SEQ ID NO: 7124.	93	62
292	¥12550	Homo sapiens	Human 5' EST secreted protein SEQ ID NO: 215 from WO 9906553.	141	100
293	D43756	Canis familiaris	fibrinogen A-alpha- chain	102	33
294	U38545	Homo sapiens	phospholipase D1	5681	99
295	W42076	Homo sapiens	The amino acid sequence of the 0276 16 protein.	236	100
296	AF090930	Homo sapiens	PRO0478	128	60
297	Y64747	Homo sapiens	Human 5' EST related polypeptide SEQ ID NO:908.	471	98
298	G01234	Homo sapiens	Human secreted protein, SEQ ID NO: 5315.	280	71
299	G02514	Homo sapiens	Human secreted protein, SEQ ID NO: 6595.	94	76
300	G02493	Homo sapiens	Human secreted protein, SEQ ID NO: 6574.	112	46
301	Z38061	Saccharomyces cerevisiae	mal5, stal, len: 1367, CAI: 0.3, AMYH_YEAST P08640 GLUCOAMYLASE S1 (EC 3.2.1.3)	340	27
302	¥59672	Homo sapiens	Secreted protein 108-006-5-0-E6-FL.	530	78
303	Y95018	Homo sapiens	Human secreted protein vp19_1, SEQ ID NO:76.	76	35
304	W34623	Homo sapiens	Human C3 protein mutant FT-1.	117	46

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	}
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE				SCORE	
305	Y87292	Homo sapiens	Human signal	81	50
			peptide containing		
			protein HSPP-69 SEQ		
			ID NO:69.		
306	AF210651	Homo sapiens	NAG18	135	60
307	Y14482	Homo sapiens	Fragment of human	212	58
			secreted protein		
			encoded by gene 17.	İ	1 .
308	Y76325	Homo sapiens	Fragment of human	343	93
			secreted protein		
			encoded by gene 35.		<u> </u>
309	Y36156	Homo sapiens	Human secreted	203	75
			protein #28.		
310	AF090931	Homo sapiens	PRO0483	76	50
311	AC004943	Homo sapiens	alpha-fetoprotein	351	85
			enhancer-binding		i
			protein; 99%		
			identical to A41948		
312	G02558	Homo sapiens	(PID:g283975) Human secreted	111	50
312	G02558	HOMO Saprens	protein, SEQ ID NO:	144	52
			6639.		
313	AK000128	Homo sapiens	unnamed protein	1338	100
023	12000220	nomo saprens	product	1336	100
314	G03786	Homo sapiens	Human secreted	164	83
	025750	nome baptens	protein, SEQ ID NO:	104	63
			7867.	ł	
315	AF090942	Homo sapiens	PRO0657	253	68
316	AF116712	Homo sapiens	PRO2738	181	52
317	AF043726	Mus musculus	PHD-finger protein	1605	64
318	Y99368	Homo sapiens	Human PRO1326	145	51
		_	(UNQ686) amino acid		
			sequence SEQ ID		
			NO:100.		
319	AF065314	Homo sapiens	cone photoreceptor	292	98
			cGMP-gated channel	į	
			alpha subunit		
320	AF003389	Caenorhabditi	contains similarity	162	28
		s elegans	to N-chimaerins		
321	Y66755	Homo sapiens	Membrane-bound	993	100
			protein PRO1185.		
322	AF109906	Mus musculus	RD	118	69
323	AF199323	Rattus	RIM2-2A	364	85
224	000000	norvegicus			
324	G02538	Homo sapiens	Human secreted	104	65
		-	protein, SEQ ID NO:		
225	000070	***	6619.		
325	G02872	Homo sapiens	Human secreted	138	65
			protein, SEQ ID NO:		
326	V41266	Trame agent	6953.		
326	Y41266	Homo sapiens	Human T139 protein.	591	100
341	G02920	Homo sapiens	Human secreted	103	67
	L		protein, SEQ ID NO:		

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	્
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
- HOCEECT EDE	<del> </del>		7001.	- Beoke	<del></del>
328	G00636	Homo sapiens	Human secreted protein, SEQ ID NO: 4717.	80	36
329	Ū37769	Oryctolagus cuniculus	protein phosphatase 2A0 B' regulatory subunit alpha isoform	556	88
330	AE001424	Plasmodium falciparum	RESA-H3 antigen	208	21
331	AF090930	Homo sapiens	PRO0478	156	82
332	AF161356	Homo sapiens	HSPC093	169	64
333	G04055	Homo sapiens	Human secreted protein, SEQ ID NO: 8136.	425	100
334	D79985	Homo sapiens	putative hydrophobic domain in the central region.	371	86
335	¥41401	Homo sapiens	Human secreted protein encoded by gene 94 clone HLYCH68.	392	100
336	W18651	Homo sapiens	Human apolipoprotein E gene +1 frameshift mutant product.	478	88
337	Y20921	Homo sapiens	Human presentiin II wild type protein fragment 5.	2126 ,	96
338	AF010144	Homo sapiens	neuronal thread protein AD7c-NTP	233	75
339	D28500	Homo sapiens	mitochondrial isoleucine tRNA synthetase	175	89
340	Y13357	Homo sapiens	Amino acid sequence of protein PRO227.	148	50
341	AL096677	Homo sapiens	dJ322G13.2 (similar to cystatin)	94	50
342	Y10843	Homo sapiens	Amino acid sequence of a human secreted protein.	186	86
343	X54134	Homo sapiens	protein-tyrosine phosphatase	3705	100 .
344	Z33908	Mus musculus	inositol 1,4,5- trisphosphate receptor	315	84
345	G00241	Homo sapiens	Human secreted protein, SEQ ID NO: 4322.	130	46
346	AF071172	Homo sapiens	HERC2	23705	99
347	AB015346	Homo sapiens	Eps15R	209	95
348	Y48596	Homo sapiens	Human breast	108	34

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	%
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
			tumour-associated protein 57.		
349	G03058	Homo sapiens	Human secreted protein, SEQ ID NO: 7139.	85	66
350	Y73443	Homo sapiens	Human secreted protein clone yb187_1 protein sequence SEQ ID NO:108.	90	36
351	G03793	Homo sapiens	Human secreted protein, SEQ ID NO: 7874.	126	66
352	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	324	73
353	Y64747	Homo sapiens	Human 5' EST related polypeptide SEQ ID NO:908.	527	98
354	AF255342	Homo sapiens	putative pheromone receptor V1RL1 long form	147	59
355	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	85	61
356	G03060	Homo sapiens	Human secreted protein, SEQ ID NO: 7141.	191	72
357	AF124729	Mus musculus	acinusS'	124	31
358	U37352	Homo sapiens	protein phosphatase 2A B'alphal regulatory subunit	1016	95
359	AF280605	Triticum aestivum	omega gliadin storage protein	125	35
360	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	150	81
361	AL035398	Homo sapiens	dJ796I17.2 (CGI-51)	226	64
362	AK000307	Homo sapiens	unnamed protein product	882	97
363	¥41401	Homo sapiens	Human secreted protein encoded by gene 94 clone HLYCH68.	392	100
364	AF288480	Homo sapiens	tubby super-family protein	238	87
365	AL023706	Schizosacchar omyces pombe	possible pre-mRNA processing by similarity to yeast prp39	383	
366	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	85	61

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE				SCORE	1
367	S68978	Oryctolagus	interleukin-1	53	58
		cuniculus	receptor antagonist		
			intracellular form		
368	AF047602	Equus zebra	luteinizing	68	37
		hartmannae	hormone/chorionic		ļ
			gonadotrophin beta-		
			subunit		
369	AF119851	Homo sapiens	PRO1722	180	75
370	U15195	Homo sapiens	alpha-1 type II	59	43
201	***************************************		collagen	<u> </u>	
371	U02082	Homo sapiens	guanine nucleotide	2648	100
			regulatory protein		
372	AF096895	Homo sapiens	chemokine-like	508	100
	<u> </u>		factor 1		
373	G03786	Homo sapiens	Human secreted	315	65
			protein, SEQ ID NO:		
38.			7867.		
374	AF010144	Homo sapiens	neuronal thread	240	67
			protein AD7c-NTP		
375	U22376	Homo sapiens	alternatively	191	80
			spliced product		
			using exon 13A		
376	U08310	Saimiri	prion protein	245	66
	<u> </u>	sciureus			
377	A76867	unidentified	Chimere G.CSF-Gly4-	550	99
			SAH en aval region		
			prepro de SAH		
378	G00442	Homo sapiens	Human secreted	94	53
			protein, SEQ ID NO:	ļ	1
3.50	<u>'</u>	ļ	4523.		
379	AF010144	Homo sapiens	neuronal thread	355	53
200		l	protein AD7c-NTP		
380	AB023634	Rattus	Ca/calmodulin-	161	91
		norvegicus	dependent protein		ĺ
381	7700438		kinase phosphatase		
381	Y99437	Homo sapiens	Human PRO1508	805	100
			(UNQ761) amino acid		
		,	sequence SEQ ID		1
382	W48351	Trama gamiana	Human breast cancer	7.0	
302	W4835T	Homo sapiens	2	139	61
	i		related protein		I
383	MEDETT	Home ganiana	I	206	1.00
J03	M58511	Homo sapiens	iron-responsive	286	100
			element-binding		
			protein/iron regulatory protein		
			regulatory protein		
		1			
384	V02671	Homo ganiena	1	100	71
384	Y02671	Homo sapiens	Human secreted	99	71
384	Y02671	Homo sapiens	Human secreted protein encoded by	99	71
384	Y02671	Homo sapiens	Human secreted protein encoded by gene 22 clone	99	71
384	Y02671 AJ012166	Homo sapiens	Human secreted protein encoded by	99	71

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE				SCORE	
200	7.07.000	77	protein, Bassoon	<del> </del>	
386	L07809 M15530	Homo sapiens	dynamin B-cell growth	98	31
		Homo sapiens	factor	158	69
388	AF090172	Mycoplasma	revertant adhesin-	109	31
	1.70.0064	pneumoniae	related protein P30	<u> </u>	
389	AJ278964	Homo sapiens	cytosolic beta- glucosidase	165	52
390	AF190642	Homo sapiens	phosphoinositide- specific phospholipase C PLC-epsilon	1095	98
391	X13238	Homo sapiens	cytochrome c oxidase subunit VIc preprotein	379	100
392	AF225417	Homo sapiens	88.8 kDa protein	1634	98
393	Y02693	Homo sapiens	Human secreted protein encoded by gene 44 clone HTDAD22.	278	75
394	AF151037	Homo sapiens	HSPC203	554	100
395	АЈ276396	Homo sapiens	matrix extracellular phosphoglycoprotein	465	100
396	X51405	Homo sapiens	pre-pro polypeptide (AA -25 to 451)	2536	100
397	W78128	Homo sapiens	Human secreted protein encoded by gene 3 clone HOSBI96.	564	71
398	¥87346	Homo sapiens	Human signal peptide containing protein HSPP-123 SEQ ID NO:123.	290	90
399	G03564	Homo sapiens	Human secreted protein, SEQ ID NO: 7645.	72	52
400	U89436	Homo sapiens	tyrosyl-tRNA synthetase	2719	100
401	W80993	Homo sapiens	Human RIP- interacting factor RIF.	1724	100
402	¥27907	Homo sapiens	Human secreted protein encoded by gene No. 119.	95	59
403	AB033102	Homo sapiens	KIAA1276 protein	921	100
404	G03797	Homo sapiens	Human secreted protein, SEQ ID NO: 7878.	192	55
405	AF096895	Homo sapiens	chemokine-like factor 1	508	100
406	Y29861	Homo sapiens	Human secreted protein clone	791	98

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH- WATERMAN SCORE	IDENTITY %
			cb98_4.		
407	Y00293	Homo sapiens	Human secreted protein encoded by gene 36.	237	97
408	W40215	Homo sapiens	Human macrophage antigen.	1358	99
409	L36056	Homo sapiens	4E-binding protein 2	639	100
410	AJ130710	Homo sapiens	QA79 membrane protein, allelic variant airm-1b	2473	100
411	AF116661	Homo sapiens	PRO1438	146	57
412	W88761	Homo sapiens	Polypeptide fragment encoded by gene 19.	150	58
413	AK024434	Homo sapiens	FLJ00024 protein	574	97
414	Y10376	Homo sapiens	SIRP-betal	2069	99
415	¥07930	Homo sapiens	Human secreted protein fragment encoded from gene 79.	351	98
416	R99390	Homo sapiens	Human 030 gene (fohy030) product.	804	71
417	AB018253	Rattus norvegicus	voltage-gated ca channel	2419	88
418	AC006017	Homo sapiens	similar to ALR; similar to AAC51735 (PID:g2358287)	2150	97
419	X72925	Homo sapiens	Dsc1b precursor	4390	99
420	AF205940	Homo sapiens	endomucin	1289	100
421	Y27868	Homo sapiens	Human secreted protein encoded by gene No. 107.	134	54
422	W74722	Homo sapiens	Human secreted protein er80_1.	2422	100
423	AF080470	Homo sapiens	pallid	872	100
424	G04072	Homo sapiens	Human secreted protein, SEQ ID NO: 8153.	201	63
425	W90961	Homo sapiens	Human CSGP-1 protein.	869	86
426	M13180	Human herpesvirus 4	nuclear antigen (EBNA 1)	59	45
427	G00365	Homo sapiens	Human secreted protein, SEQ ID NO: 4446.	99	75
428	AF155819	Mus musculus	doublecortin-like kinase	3448	96
429	Y04315	Homo sapiens	Human secreted protein encoded by gene 23.	385	100
430	AB026891	Homo sapiens	cystine/glutamate transporter	2552	100

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF	NUMBER	]		WATERMAN	IDENTITY
NUCLEOTIDE				SCORE	1
431	Y15286	Homo sapiens	vacuolar proton-	459	100
			ATPase subunit M9.2		
432	X81053	Homo sapiens	type IV collagen	9706	99
			alpha 4 chain		
433	U41829	Macaca	MHC class I antigen	365	76
		mulatta	Mamu B*07		
434	G03371	Homo sapiens	Human secreted	100	41
			protein, SEQ ID NO:		
			7452.		
435	AF233238	Gallus gallus	BMP signal	170	74
		<u> </u>	transducer Smad1		
436	X52425	Homo sapiens	interleukin 4	4492	99
		<u> </u>	receptor		
437	Y06115	Homo sapiens	Human organic	2593	96
			cation transporter		1
	700000		OCT-3.		
438	G02872	Homo sapiens	Human secreted	130	54
	.[		protein, SEQ ID NO:		l
430	7.00000		6953. located at OATL1	1304	L
439	L08239	Homo sapiens		1304 2613	95
440	X17115	Homo sapiens	precursor (AA -15 to 612)	2613	86
441	Y06816	Homo sapiens	Human Notch2	1471	98
441	100810	Homo sapiens	(humN2) protein	14/1	98
			sequence.		}
442	AB019440	Homo sapiens	immunogloblin heavy	545	88
112	ABOTS440	nomo saprens	chain variable	743	00
			region		
443	Y87350	Homo sapiens	Human signal	1061	100
	120,330	nomo bapacia	peptide containing	1302	-00
			protein HSPP-127		
			SEQ ID NO:127.		,
444	AJ271736	Homo sapiens	synaptobrevin-like	1128	100
		_	1 protein		1
445	Y11534	Homo sapiens	PEG1/MEST	1787	100
446	W85719	Homo sapiens	Novel protein	271	100
			(Clone AJ143_1).	Ì	<b>]</b>
447	Y07900	Homo sapiens	Human secreted	87	94
			protein fragment		
			encoded from gene		
			49.		
448	X14329	Homo sapiens	carboxypeptidase N	2463	99
			precursor (AA -20	ļ	
			to 438)		<u> </u>
449	M36803	Homo sapiens	hemopexin	2603	100
450	AF116238	Homo sapiens	pseudouridine	1927	99
			synthase 1	<b>]</b>	<u> </u>
451	AB031051	Homo sapiens	organic anion	444	42
	<u> </u>	<u> </u>	transporter OATP-E		
452	X16841	Homo sapiens	precursor protein.	3958	100
		<u></u>	(-19 to 742)		
453	AK022830	Homo sapiens	unnamed protein	373	100
	1	1	product		1

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE			}	SCORE	1
454	Y94890	Homo sapiens	Human protein clone HP02798.	637	90
455	AL356014	Arabidopsis thaliana	putative protein	210	38
456	X60221	Homo sapiens	H+-ATP synthase subunit b	1297	99
457	G02532	Homo sapiens	Human secreted protein, SEQ ID NO: 6613.	168	69
458	AJ245375	Homo sapiens	PP35 act	1895	99
459	G00397	Homo sapiens	Human secreted protein, SEQ ID NO: 4478.	57	52
460	AE003708	Drosophila melanogaster	CG6194 gene product	234	65
461	W48352	Homo sapiens	Human breast cancer related protein BCFLT1.	80	60
462	U53420	Rattus norvegicus	sodium-calcium exchanger form 3	397	76
463	Y13402	Homo sapiens	Amino acid sequence of protein PRO310.	1075	63
464	¥27607	Homo sapiens	Human secreted protein encoded by gene No. 41.	610	100
465	L08666	Homo sapiens	porin	122	51
466	Y87084	Homo sapiens	Human secreted protein sequence SEQ ID NO:123.	232	78
467	X16841	Homo sapiens	precursor protein (-19 to 742)	3958	100
468	¥48507	Homo sapiens	Human breast tumour-associated protein 52.	295	91
469	X07973	Ovis aries	MT-Ib protein	84	45
470	W48927	Homo sapiens	Schwannomin-binding protein C-terminal fragment.	78	60
471	AJ224171	Homo sapiens	lipophilin A	454	100
472	G01984	Homo sapiens	Human secreted protein, SEQ ID NO: 6065.	211	64
473	G03793	Homo sapiens	Human secreted protein, SEQ ID NO: 7874.	200	74
474	Y17829	Homo sapiens	Human PRO354 protein sequence.	1006	100
475	Y66706	Homo sapiens	Membrane-bound protein PRO1129.	2153	99
476	G03800	Homo sapiens	Human secreted protein, SEQ ID NO: 7881.	99	78
477	AF216389	Homo sapiens	semaphorin Rs	296	85

TABLE 2

480 2 481 482 2 483 3	NUMBER  X93036  X53795  AF056195  AF116715  Z24680  Y76198  AF010144  Y91592	Homo sapiens Homo sapiens Homo sapiens Homo sapiens Homo sapiens Homo sapiens Homo sapiens	MAT8 protein inducible membrane protein neuroblastoma- amplified protein PRO2829 garp Human secreted protein encoded by gene 75. neuronal thread protein AD7c-NTP	WATERMAN SCORE 469 1412 4504 96 167 82	100 100 100 98 46 43 80
480 2 481 2 482 2 483 3	X53795 AF056195 AF116715 Z24680 Y76198 AF010144	Homo sapiens Homo sapiens Homo sapiens Homo sapiens Homo sapiens Homo sapiens	inducible membrane protein neuroblastoma- amplified protein PRO2829 garp Human secreted protein encoded by gene 75. neuronal thread	1412 4504 96 167 82	98 46 43
481 2 481 2 482 2 483 3	AF056195 AF116715 Z24680 Y76198 AF010144	Homo sapiens Homo sapiens Homo sapiens Homo sapiens Homo sapiens Homo sapiens	inducible membrane protein neuroblastoma- amplified protein PRO2829 garp Human secreted protein encoded by gene 75. neuronal thread	4504 96 167 82	98 46 43
481	AF116715 Z24680 Y76198 AF010144	Homo sapiens Homo sapiens Homo sapiens Homo sapiens	amplified protein PRO2829 garp Human secreted protein encoded by gene 75. neuronal thread	96 167 82	46
482 2 483 3 484 4	Z24680 Y76198 AF010144	Homo sapiens Homo sapiens Homo sapiens	garp Human secreted protein encoded by gene 75. neuronal thread	167	43
484	Y76198 AF010144	Homo sapiens Homo sapiens	Human secreted protein encoded by gene 75.	82	
484	AF010144	Homo sapiens	protein encoded by gene 75.		80
		-		324	1
485	Y91592	Homo sapiens		52.2	59
			Human secreted protein sequence encoded by gene 6 SEQ ID NO:265.	738	100
486	Y94890	Homo sapiens	Human protein clone HP02798.	605	81
487	U89436	Homo sapiens	tyrosyl-tRNA synthetase	2719	100
488	W88579	Homo sapiens	Secreted protein encoded by gene 46 clone HCFMV39.	479	95
489	G02360	Homo sapiens	Human secreted protein, SEQ ID NO: 6441.	102	70
490 1	070976	Homo sapiens	arrestin	1071	61
491 1	U80746	Homo sapiens	CAGH4	277	81
492	U26361	Helicobacter pylori	Hpn	80	83
493	Y19730	Homo sapiens	SEQ ID NO 448 from W09922243.	135	53
494	¥27868	Homo sapiens	Human secreted protein encoded by gene No. 107.	185	50
495	AF090901	Homo sapiens	PRO0195	90	46
496	AF061529	Mus musculus	rjs	270	76
497	L34049	Rattus norvegicus	megalin	322	41
	J04204	Bos taurus	32 kd accessory protein	1743	100
499	Y71118	Homo sapiens	Human Hydrolase protein-16 (HYDRL- 16).	2205	97
500	X13916	Homo sapiens	LDL-receptor related precursor (AA -19 to 4525)	715	92
501	Y00877	Homo sapiens	Human LAPH-2 protein sequence.	138	40
502	Y99368	Homo sapiens	Human PRO1326 (UNQ686) amino acid sequence SEQ ID NO:100.	156	48

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE	1			SCORE	
503	Y48308	Homo sapiens	Human prostate	901	100
		-	cancer-associated		
			protein 5.		
504	<b>U67060</b>	Cricetulus	SREBP cleavage	6196	92
		griseus	activating protein		
505	W75857	Homo sapiens	Human secretory	1761	99
			protein of clone		
			CO1020-1.		
506	X55764	Homo sapiens	11beta-hydrolase	2604	99
	<u>L</u>		precursor		
507	Y41685	Homo sapiens	Human PRO213	1344	94
			protein sequence.		İ
508	X95240	Homo sapiens	cysteine-rich	1368	100
			secretory protein-3		
509	AF065482	Homo sapiens	sorting nexin 2	517	77
510	AF135025	Homo sapiens	kallikrein-like	1301	100
			protein 5-related	1	
			protein 1		
511	AF220492	Homo sapiens	krueppel-like zinc	4100	99
			finger protein HZF2		
512	X58397	Homo sapiens	variable region	670	100
			V251 from V(H)5		,
			gene		
513	W95348	Homo sapiens	Human foetal kidney	406	90
			secreted protein		1
F3.4	3 7000 170		em397_2.		
514	AJ000479	Homo sapiens	putative G-Protein	1966	100
			coupled receptor,	İ	
515	L05514	Homo sapiens	histatin 3	280	100
516	X95240	Homo sapiens	cysteine-rich	1368	100
310	A33240	HOMO Saprens	secretory protein-3	1368	100
517	D00654	Homo sapiens	enteric smooth	1972	100
, ,	D00054	HOMO Saprems	muscle gamma-actin	1972	1 100
518	AJ005453	Mytilus	metallothionein 10	94	35
	20003433	edulis	II	"	33
519	W37864	Homo sapiens	Human protein	362	98
	1	LOMO BUPTOMB	comprising	302	30
			secretory signal		
			amino acid sequence	į ·	
			1.		
520	X76091	Homo sapiens	DNA binding protein	3743	99
			RFX2		
521	G03800	Homo sapiens	Human secreted	113	39
		1	protein, SEQ ID NO:		
			7881.		!
522	AJ289243	Mus musculus	calpain 12	147	53
523	D30037	Homo sapiens	phosphatidylinosito	1464	100
		_	1 transfer protein		
524	AJ012370	Homo sapiens	NAALADase II	3872	99
			protein	1	
525	G03909	Homo sapiens	Human secreted	80	41
		_	protein, SEQ ID NO:	ł	1

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH- WATERMAN	& TDTN/MT/m/
OF	NUMBER			SCORE	IDENTITY
NUCLEOTIDE			7990.	SCORE	
	1765060	Garina Santa	SREBP cleavage	6196	92
526	U67060	Cricetulus	activating protein	0130	32
		griseus	Human breast cancer	85	61
527	W48351	Homo sapiens	related protein BCRB2.	65	01
528	AF093408	Homo sapiens	protein kinase A binding protein AKAP110	461	78
529	Y92182	Homo sapiens	Human partial TANGO 195 from clone T195Athpb93f1.	1682	100
530	M28200	Homo sapiens	MHC class II lymphocyte antigen beta chain	432	72
531	X58397	Homo sapiens	variable region V251 from V(H)5 gene	491	74
532	D88577	Mus musculus	Kupffer cell receptor	904	46
533	M84379	Homo sapiens	lymphocyte antigen	1922	97
534	AF279265	Homo sapiens	putative anion transporter 1	212	91
535	AF132035	Homo sapiens	core 2 beta-1,6-N- acetylglucosaminylt ransferase 3	852	92
536	G02958	Homo sapiens	Human secreted protein, SEQ ID NO: 7039.	512	98
537	Y07938	Homo sapiens	Human secreted protein fragment encoded from gene 87.	302	100
538	Y36203	Homo sapiens	Human secreted protein #75.	175	51
539	U16738	Homo sapiens	CAG-isl 7	472	75
540	AL161531	Arabidopsis thaliana	putative proline- rich protein	118	57
541	K00558	Homo sapiens	alpha-tubulin	2393	100
542	U20286	Rattus norvegicus	lamina associated polypeptide 1C	641	55
543	Y27907	Homo sapiens	Human secreted protein encoded by gene No. 119.	128	61
544	AF109674	Rattus norvegicus	late gestation lung protein 1	954	87
545	L35278	Homo sapiens	bone morphogenetic protein	92	40
546	G00541	Homo sapiens	Human secreted protein, SEQ ID NO: 4622.	94	68
547	AF190664	Mus musculus	LMBR2	246	78
548	Y12793	Homo sapiens	Human 5' EST	113	50

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH- WATERMAN SCORE	* IDENTITY
NOCHBOITE			secreted protein SEQ ID NO:383.	BEORE	
549	AF133816	Homo sapiens	insulin-like peptide INSL5	714	100
550	X70910	Homo sapiens	tetranectin	1069	100
551	M11902	Mus musculus	proline-rich	135	39
			salivary protein	•	
552	G03477	Homo sapiens	Human secreted	89	58
			protein, SEQ ID NO: 7558.		
553	U63542	Homo sapiens	FAP protein	156	77
554	Y60497	Homo sapiens	Human normal bladder tissue EST encoded protein 169.	89	50
555	Y87303	Homo sapiens	Human signal peptide containing protein HSPP-80 SEQ ID NO:80.	275	100
556	¥17526	Homo sapiens	Human secreted protein clone AM349 2 protein.	1220	100
557	G04064	Homo sapiens	Human secreted protein, SEQ ID NO: 8145.	83	35
558	U51919	Rattus norvegicus	preprocortistatin	84	36
559	AF090901	Homo sapiens	PRO0195	92	66
560	J04031	Homo sapiens	MDMCSF (EC 1.5.1.5; EC 3.5.4.9; EC 6.3.4.3)	226	52
561	AL117237	Homo sapiens	hypothetical protein	4088	94
562	Y50931	Homo sapiens	Human fetal brain cDNA clone vc25_1 derived protein.	485	100
563	Y21631	Homo sapiens	Ligand binding domain of nuclear receptor hTRbeta.	1738	99
564	X90857	Homo sapiens	-14	177	69
565	W35904	Homo sapiens	Human haematopoietic- specific protein (HSP).	862	87
566	W99070	Homo sapiens	Human PIGR-1.	244	90
567	X61653	Homo sapiens	TCR V-beta 13.5	600	100
568	AF166350	Homo sapiens	ST7 protein	4711	99
569	Y07938	Homo sapiens	Human secreted protein fragment encoded from gene 87.	302	100
570	X85019	Homo sapiens	UDP- GalNAc:polypeptide	3069	100

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH- WATERMAN SCORE	% IDENTITY
			N- acetylgalactosaminy l transferase		
571	U89942	Homo sapiens	lysyl oxidase- related protein	2427	89
572	X04391	Homo sapiens	put. precursor polypeptide	2671	99
573	W36903	Homo sapiens	Human epididymis- specific receptor protein.	5352	100
574	U22816	Homo sapiens	LAR-interacting protein 1b	2042	57
575	Y58618	Homo sapiens	Protein regulating gene expression PRGE-11.	729	57
576	AJ278348	Homo sapiens	pregnancy- associated plasma protein-E	743	100
577	AK024512	Homo sapiens	unnamed protein product	471	100
578	AL031685	Homo sapiens	dJ963K23.4 (KIAA0939 (novel Sodium/hydrogen exchanger family member))	2010	100
579	AF183183	Mus musculus	cochlear otoferlin	116	91
580	W74722	Homo sapiens	Human secreted protein er80_1.	2422	100
581	G03356	Homo sapiens	Human secreted protein, SEQ ID NO: 7437.	. 114	44
582	Y82777	Homo sapiens	Human chordin related protein (Clone dw665_4).	610	98
583	J04988	Homo sapiens	90 kD heat shock protein	3702	100
584	K02576	Homo sapiens	salivary proline- rich protein 1	97	34
585	G03786	Homo sapiens	Human secreted protein, SEQ ID NO: 7867.	159	72
586	AK024490	Homo sapiens	FLJ00092 protein	204	57
587	U22231 .	Felis catus	ribosomal protein S3a	327	57
588	X55681	Lycopersicon esculentum	extensin (class I)	96	38
589	U68137	Rana ridibunda	prepro-somatostatin	81	33
590	Y19655	Homo sapiens	SEQ ID NO 373 from W09922243.	814	84
591	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	222	56

TABLE 2

OF NUCLECTED   NUMBER   Homo sapiens   HDCGC21P   116   38	SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	%
Section	OF	NUMBER			WATERMAN	IDENTITY
Section	NUCLEOTIDE				SCORE	
Crassa	592	AF067801	Homo sapiens	HDCGC21P	116	38
Protein, SEQ ID NO: 7361.			crassa			
Protein encoded by gene 44 clone   HTDAD22.   F10	594	G03280	Homo sapiens	protein, SEQ ID NO:	169	100
Melanogaster   Milo antigen   G205   100	595	Y02693	Homo sapiens	protein encoded by gene 44 clone	130	70
AR021847   Homo saplens   unnamed protein   178   94	596		melanogaster		247	
Section	597	Z22968	Homo sapiens	M130 antigen	6205	100
Pernix   hypothetical protein   hypothetical protein   hypothetical protein   hypothetical protein   hypothetical protein   hypothetical protein   hypothetical protein   hypothetical	598	AK021847	Homo sapiens		178	94
G02872   Homo sapiens   Human secreted protein, SEQ ID NO: 6953.   Homo sapiens   Human secreted protein, SEQ ID NO: 6953.   Homo sapiens   Human secreted protein, SEQ ID NO: 6619.   G5	599	AP000060		hypothetical protein	80	39
Protein, SEQ ID NO: 6953.	600	AK001363			558	92
Protein, SEQ ID NO: 6619.	601	G02872	Homo sapiens	protein, SEQ ID NO: 6953.	147	49
AJ243460   Leishmania   proteophosphoglycan   172   35	602	G02538	Homo sapiens	protein, SEQ ID NO:	149	65
major	603	X98330	Homo sapiens	ryanodine receptor 2	25918	99
protein sequence #2.	604	AJ243460	1	proteophosphoglycan	172	35
Caballus   Caballus	605	Y81807	Homo sapiens	protein sequence	2499	63
of a human transferase designated HUTRAN- 1.  608 G03172 Homo sapiens Human secreted protein, SEQ ID NO: 7253.  609 Y31730 Homo sapiens Human fused protein kinase-deletion mutant fused C-term.  610 Y30163 Homo sapiens Human dorsal root receptor 5 hDRR5.  611 G03714 Homo sapiens Human secreted protein, SEQ ID NO: 7795.	606	AF041069		fibronectin	109	56
protein, SEQ ID NO: 7253.  609 Y31730 Homo sapiens Human fused protein kinase-deletion mutant fused C-term.  610 Y30163 Homo sapiens Human dorsal root receptor 5 hDRR5.  611 G03714 Homo sapiens Human secreted protein, SEQ ID NO: 7795.			Homo sapiens	of a human transferase designated HUTRAN- 1.		
kinase-deletion mutant fused C-term.  610 Y30163 Homo sapiens Human dorsal root receptor 5 hDRR5.  611 G03714 Homo sapiens Human secreted protein, SEQ ID NO: 7795.	608	G03172	Homo sapiens	protein, SEQ ID NO:	82	66
receptor 5 hDRR5.  611 G03714 Homo sapiens Human secreted 171 70 protein, SEQ ID NO: 7795.	609	¥31730	Homo sapiens	kinase-deletion mutant fused C-	561	99
protein, SEQ ID NO: 7795.	610	Y30163	Homo sapiens		112	49
612 U58514 Homo sapiens chitinase precursor 402 75	611	G03714	Homo sapiens	protein, SEQ ID NO:	171	70
	612	U58514	Homo sapiens	chitinase precursor	402	75

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH- WATERMAN SCORE	% IDENTITY
613	AL122105	Homo sapiens	hypothetical protein	399	73
614	AF059198	Homo sapiens	protein kinase/endoribonulc ease	5093	99
615	X17531	Strongylocent rotus purpuratus	epidermal growth factor	234	54
616	AF112982	Homo sapiens	group IID secretory phospholipase A2	852	100
617	AJ006119	Homo sapiens	anti-IFN-G scFv	675	97
618	W54097	Homo sapiens	Homo sapiens B223 sequence.	339	98
619	AF090930	Homo sapiens	PRO0478	141	79
620	W61624	Homo sapiens	Clone HHFEK40 of TM4SF superfamily.	564	98
621	AF119851	Homo sapiens	PRO1722	115	52
622	G03172	Homo sapiens	Human secreted protein, SEQ ID NO: 7253.	173	48
623	¥41379	Homo sapiens	Human secreted protein encoded by gene 72 clone HE6GA29.	261	100
624	U86339	Drosophila grimshawi	expanded	142	36
625	D86853	Catharanthus roseus	extensin	142	39
626	\$58722	Homo sapiens	X-linked retinopathy protein {C-terminal, clone XEH.8c}	116	49
627	G02532	Homo sapiens	Human secreted protein, SEQ ID NO: 6613.	108	50
628	G03790	Homo sapiens	Human secreted protein, SEQ ID NO: 7871.	129	61
629	Y27665	Homo sapiens	Human secreted protein encoded by gene No. 99.	345	100
630	G02837	Homo sapiens	Human secreted protein, SEQ ID NO: 6918.	78	75
631	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	172	65
632	X14329	Homo sapiens	carboxypeptidase N precursor (AA -20 to 438)	2463	99
633	Y87235	Homo sapiens	Human signal peptide containing protein HSPP-12 SEQ	867	100

TABLE 2

OF NUCLEOTIDE   NUMBER   No.   NUMBER   NUMBER   NUMBER   Number	SEO ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	ે ક
634   W88627   Homo sapiens   Secreted protein encoded by gene 94 clone HPMBQ32.	OF	I .			WATERMAN	IDENTITY
				ID NO:12.		
Protein encoded by gene 117 clone   HAMOW78.   HAMOW79.   HAMOW78.   HAMOW79.   HAMOW7				encoded by gene 94 clone HPMBQ32.		
Secreted protein   1391   100	635	W74845	Homo sapiens	protein encoded by gene 117 clone	395	71
Secreted protein.	636	M16941	Homo sapiens		1412	100
Containing protein   Clone HP00631 amino acid sequence.	637	W95634	Homo sapiens	secreted protein.	1391	100
Protein, SEQ ID NO: 7870.	638	Y78801	Homo sapiens	containing protein clone HP00631 amino	1277	100
Cell clone HP00804 protein.   Cell clone HP00804 protein.   Fpidermal growth factor-like variant in skin-2 amino acid sequence.   Sequen	639	G03789	Homo sapiens	protein, SEQ ID NO:	191	76
factor-like variant in skin-2 amino acid sequence.  642 G03646 Homo sapiens Human secreted protein, SEQ ID NO: 7727.  643 Y87328 Homo sapiens Human signal peptide containing protein HSPP-105 SEQ ID NO:105.  644 Y21386 Homo sapiens Human HUPF-I mutant protein fragment 34.  645 G03790 Homo sapiens Human secreted protein, SEQ ID NO: 7871.  646 Y35894 Homo sapiens Extended human secreted protein sequence, SEQ ID NO. 143.  647 G00517 Homo sapiens Human secreted protein, SEQ ID NO: 4598.  648 Y25716 Homo sapiens Human secreted protein sequence, SEQ ID NO: 4598.  649 G01246 Homo sapiens Human secreted protein encoded from gene 6.  649 Human secreted protein, SEQ ID NO: 5327.	640	W64535	Homo sapiens	cell clone HP00804	2014	99
G03646   Homo sapiens   Human secreted protein, SEQ ID NO: 7727.	641	¥94621	Homo sapiens	factor-like variant in skin-2 amino	529	91
Peptide containing protein HSPP-105   SEQ ID NO:105.	642	G03646	Homo sapiens	protein, SEQ ID NO:	81	42
Protein fragment 34.	643	¥87328	Homo sapiens	peptide containing protein HSPP-105	681	100
Protein, SEQ ID NO: 7871.	644	Y21386	Homo sapiens	protein fragment	78	31
secreted protein sequence, SEQ ID NO. 143.  647 G00517 Homo sapiens Human secreted protein, SEQ ID NO: 4598.  648 Y25716 Homo sapiens Human secreted protein encoded from gene 6.  649 G01246 Homo sapiens Human secreted protein, SEQ ID NO: 5327.	645	G03790	Homo sapiens	protein, SEQ ID NO:	140	55
protein, SEQ ID NO: 4598.  Homo sapiens Human secreted protein encoded from gene 6.  Homo sapiens Human secreted protein, SEQ ID NO: 5327.	646	¥35894	Homo sapiens	secreted protein sequence, SEQ ID	349	100
protein encoded from gene 6.  649 G01246 Homo sapiens Human secreted protein, SEQ ID NO: 5327.	647	G00517	Homo sapiens	protein, SEQ ID NO:	109	37
649 G01246 Homo sapiens Human secreted protein, SEQ ID NO: 5327.	648	¥25716	Homo sapiens	protein encoded	339	39
	649	G01246	Homo sapiens	protein, SEQ ID NO:	152	80
	650	R95913	Homo sapiens	Neural thread	233	50

TABLE 2

SEQ ID NO: OF	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH- WATERMAN	
NUCLEOTIDE				SCORE	
			protein.		
651	Y91469	Homo sapiens	Human secreted protein sequence encoded by gene 19 SEQ ID NO:142	98	48
652	G03136	Homo sapiens	Human secreted protein, SEQ ID NO: 7217.	94	43
653	U14635	Caenorhabditi s elegans	weak similarity to NADH dehydrogenase	186	30
654	¥14482	Homo sapiens	Fragment of human secreted protein encoded by gene 17.	163	54
655	U14635	Caenorhabditi s elegans	weak similarity to NADH dehydrogenase	186	30
656	AB024565	Mus musculus	heparan sulfate 6- sulfotransferase 2	1128	79
657	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	243	70
658	Y14471	Homo sapiens	Fragment of human secreted protein encoded by gene 4.	95	65
659	AF135381	Homo sapiens	chemokine-like factor 3	89	59
660	U40407	synthetic construct	T cell receptor alpha chain	586	100
661	AF039712	Caenorhabditi s elegans	contains similarity to CDP-alcohol phosphotransferases	289	43
662	G03790	Homo sapiens	Human secreted protein, SEQ ID NO: 7871.	113	55
663	AF084467	Homo sapiens	heparanase	170	32
664	AF279890	Homo sapiens	2P domain potassium channel TREK2	1189	94
665	W63693	Homo sapiens	Human secreted protein 13.	243	84
666	AE003908	Xylella fastidiosa	hypothetical protein	120	28
667	B08948	Homo sapiens	Human secreted protein sequence encoded by gene 21 SEQ ID NO:105.	985	89
668	AF023158	Homo sapiens	tyrosine phosphatase	346	64
669	AF169257	Homo sapiens	sodium/calcium exchanger NCKX3	189	57
670	AF132969	Homo sapiens	CGI-35 protein	364	69
671	AF269286	Homo sapiens	HC6	112	50
672	X98494	Homo sapiens	M phase phosphoprotein 10	529	68
673	G03787	Homo sapiens	Human secreted	83	44

TABLE 2

SEQ ID NO:	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH- WATERMAN	% IDENTITY
NUCLEOTIDE	NOMBER			SCORE	TDEMILLI
			protein, SEQ ID NO: 7868.		
674	AF119855	Homo sapiens	PRO1847	123	46
675	AJ242540	Volvox carteri f. nagariensis	hydroxyproline-rich glycoprotein DZ- HRGP	242	42
676	Y91666	Homo sapiens	Human secreted protein sequence encoded by gene 72 SEQ ID NO:339.	529	96
677	¥57936	Homo sapiens	Human transmembrane protein HTMPN-60.	669	100
678	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	156	72
679	W18878	Homo sapiens	Human protein kinase C inhibitor, IPKC-1.	98	68
680	Z12168	Canis familiaris	stimulatory GTP binding protein	980	88
681	G00517	Homo sapiens	Human secreted protein, SEQ ID NO: 4598.	160	48
682	W19932	Homo sapiens	Alzheimer's disease protein encoded by DNA from plasmid pGCS55.	362	100
683	¥30709	Homo sapiens	Amino acid sequence of a human secreted protein.	99	56
684	AF269286	Homo sapiens	HC6	137	72
685	M14362	Homo sapiens	T-cell surface antigen CD2 precursor	275	64
686	G02493	Homo sapiens	Human secreted protein, SEQ ID NO: 6574.	173	61
687	AF248635	Mus musculus	lymphocyte antigen 108 isoform l	303	50
688	D86983	Homo sapiens	similar to D.melanogaster peroxidasin(Ul1052)	288	55
689	Y59711	Homo sapiens	Secreted protein 58-20-4-G7-FL1.	895	91
690	W48848	Homo sapiens	Human receptor tyrosine kinase LMR3_h N-terminal polypeptide.	1056	89
691	W22652	Homo sapiens	64-863 antibody HSV863 light chain variable region.	459	77
692	AF098066	Homo sapiens	squamous cell carcinoma antigen	1001	98

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	<u> </u>
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE		,		SCORE	
			recognized by T		
			cell		
693	D83039	Homo sapiens	eti-1	426	98
694	Y79511	Homo sapiens	Human carbohydrate-	1245	99
			associated protein		
605	1,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	5-4	CRBAP-7.	857	83
695	U12623	Rattus norvegicus	gated cation	857	83
		nor vegicus	channel		
696	AF229067	Homo sapiens	PADI-H protein	174	61
697	G03789	Homo sapiens	Human secreted	196	75
		1.5	protein, SEQ ID NO:		1
			7870.		
698	U10921	Macaca	T-cell receptor	578	82
		mulatta	alpha chain		
699	U31913	Homo sapiens	HBV-X associated	167	100
		·	protein	<u> </u>	<u> </u>
700	X99043	Mus musculus	brain-derived	348	82
			immunoglobulin		
			superfamily molecule	[	
701	X59770	Homo sapiens	type II	2130	100
701	A33170	Homo sapiens	interleukin-1	2130	1 100
			receptor		
702	AC018758	Homo sapiens	GPI-anchored	207	31
		-	metastasis-	ŀ	
			associated protein	i	
			homolog		
703	Y28816	Homo sapiens	pm4_13 secreted	280	100
			protein.		
704	Y52386	Homo sapiens	Human transmembrane	1077	100
705	U12392	Haematobia	protein HP02000. putative ATPase	481	55
705	012392	irritans	putative Alease	*01	33
706	U11265	Homo sapiens	HLA-B35	351	92
707	X64594	Homo sapiens	50 kDa erythrocyte	301	88
			plasma membrane		
			glycoprotein		
708	AB046048	Macaca	unnamed portein	260	67
		fascicularis	product		
709	G03807	Homo sapiens	Human secreted	119	60
	1		protein, SEQ ID NO:		
710	-		7888.	1314	1.00
710	G03315	Homo sapiens	Human secreted	314	100
	1		protein, SEQ ID NO: 7396.		
711	Y50945	Homo sapiens	Human adult thymus	742	100
	130343	TOWO Papters	cDNA clone vh1 1	'	
	1		derived protein #1.		
712	G00564	Homo sapiens	Human secreted	271	98
			protein, SEQ ID NO:		
			4645.		1
713	G00125	Homo sapiens	Human secreted	373	80

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH- WATERMAN SCORE	% IDENTITY
			protein, SEQ ID NO: 4206.	}	
714	Y13352	Homo sapiens	Amino acid sequence of protein PRO228.	872	98
715	G02753	Homo sapiens	Human secreted protein, SEQ ID NO: 6834.	222	68
716	Y19588	Homo sapiens	Amino acid sequence of a human secreted protein.	329	100
717	AB030235	Canis familiaris	D4 dopamine receptor	79	35
.718	W74577	Homo sapiens	Human membrane protein BA2303.	748	100
719	Y02693	Homo sapiens	Human secreted protein encoded by gene 44 clone HTDAD22.	235	61
720	X97868	Homo sapiens	arylsulphatase	167	84
721	Y13215	Homo sapiens	Human secreted protein encoded by 5' EST SEQ ID NO: 229.	234	97
722	Y20298	Homo sapiens	Human apolipoprotein E mutant protein fragment 11.	152	39
723	Y86231	Homo sapiens	Human secreted protein HLTHR66, SEQ ID NO:146.	207	51
724	W75083	Homo sapiens	Human secreted protein encoded by gene 27 clone HSPAF93.	685	100
725	W88627	Homo sapiens	Secreted protein encoded by gene 94 clone HPMBQ32.	301	73
726	Y27868	Homo sapiens	Human secreted protein encoded by gene No. 107.	229	58
727	AK025470	Homo sapiens	unnamed protein product	130	64
728	G02872	Homo sapiens	Human secreted protein, SEQ ID NO: 6953.	159	46
729	¥25776	Homo sapiens	Human secreted protein encoded from gene 66.	334	43
730	AF116661	Homo sapiens	PRO1438	153	56
731	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	106	72
732	ช77589	Homo sapiens	MHC class II HLA-	133	69

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
			DQ-alpha chain		
733	G00357	Homo sapiens	Human secreted protein, SEQ ID NO: 4438.	223	67
734	R28542	Homo sapiens	Human complement type 1 receptor SCR9.	152	96
735	¥27868	Homo sapiens	Human secreted protein encoded by gene No. 107.	150	65
736	AB036706	Homo sapiens	intelectin	368	76
737	Y74042	Homo sapiens	Human prostate tumor EST fragment derived protein #229.	206	65
738	Y36156	Homo sapiens	Human secreted protein #28.	153	77
739	W74802	Homo sapiens	Human secreted protein encoded by gene 73 clone HSQEL25.	1751	79
740	W85614	Homo sapiens	Secreted protein clone fr473_2.	224	91
741	Y13377	Homo sapiens	Amino acid sequence of protein PRO257.	394	98
742	269384	Caenorhabditi s elegans	Similarity to Salmonella regulatory protein UHPC (SW:UHPC SALTY)	515	45
743	W47589	Homo sapiens	T-cell receptor beta-chain.	681	92
744	G03786	Homo sapiens	Human secreted protein, SEQ ID NO: 7867.	243	71
745	¥50690	Homo sapiens	Human Hum4 VL ClaI- HindIII segment encoded protein.	540	81
746	U03414	Rattus norvegicus	neuronal olfactomedin- related ER localized protein	363	67
747	G00352	Homo sapiens	Human secreted protein, SEQ ID NO: 4433.	84	51
748	Y02671	Homo sapiens	Human secreted protein encoded by gene 22 clone HMSJW18.	145	60
749	AF026919	Homo sapiens	amyloid lambda light chain variable region	557	83
750	X76732	Homo sapiens	NEFA protein		i)

TABLE 2

SEO ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	ક
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE				SCORE	
751	R92754	Homo sapiens	Human growth	628	100
			differentiation	020	=00
			factor-12.	1	1
752	Y91462	Homo sapiens	Human secreted	597	100
			protein sequence		====
			encoded by gene 12		
			SEO ID NO:135.		
753	Y66700	Homo sapiens	Membrane-bound	754	99
			protein PRO1137.	'	
754	G01648	Homo sapiens	Human secreted	281	100
			protein, SEQ ID NO:		
			5729.	1	
755 /	AB040434	Homo sapiens	hTROY	752	100
756	Y28680	Homo sapiens	Human nm214 3	178	44
		land Bapadilo	secreted protein.	~, ~	**
757	W75100	Homo sapiens	Human secreted	203	66
		Juliano Burgana	protein encoded by		""
			gene 44 clone		
	l .		HE8CJ26.		
758	AF090930	Homo sapiens	PRO0478	87	45
759	D84336	Rattus	ZOG	484	48
	20100	norvegicus		101	1.0
760	W88627	Homo sapiens	Secreted protein	150	81
		III III III III III III III III III I	encoded by gene 94	1 230	1 02
			clone HPMBQ32.		
761	Y48616	Homo sapiens	Human breast	569	70
			tumour-associated		
			protein 77.	ĺ	
762	Y87320	Homo sapiens	Human signal	918	100
	·	_	peptide containing		
			protein HSPP-97 SEQ		
			ID NO:97.		
763	G03655	Homo sapiens	Human secreted	248	89
		·	protein, SEQ ID NO:		
			7736.		
764	AF031174	Homo sapiens	Ig-like membrane	428	45
			protein		
765	U08255	Rattus	glutamate receptor	802	99
		norvegicus	delta-1 subunit		
766	Y99369	Homo sapiens	Human PRO1249	4578	99
			(UNQ632) amino acid		
	j		sequence SEQ ID		
			NO:102.		
767	AK001586	Homo sapiens	unnamed protein	973	98
			product	1	
768	AC007063	Arabidopsis	putative ABC	126	31
		thaliana	transporter		1
769	AF303378	Homo sapiens	sialic acid-	713	100
•			specific		]
	,		acetylesterase II		1
770	G00517	Homo sapiens	Human secreted	90	37
İ		1	protein, SEQ ID NO:		
ί.	1		4598.	I	i

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF NUCLEOTIDE	NUMBER			WATERMAN	IDENTITY
771	Y59733	Homo sapiens	Human normal	1253	99
			ovarian tissue		
			derived protein 10.		
772	AF132856	Homo sapiens	suppressor of G2	163	86
			allele of skpl	j	J
		<u></u>	homolog	l	
773	AB029482	Mus musculus	JNK-binding protein JNKBP1	1082	97
774	G02108	Homo sapiens	Human secreted	134	62
		-	protein, SEQ ID NO: 6189.		
775	AB047818	Homo sapiens	Soggy	1239	100
776	Y66689	Homo sapiens	Membrane-bound	804	99
			protein PRO1136.		}
777	Y71107	Homo sapiens	Human Hydrolase	733	99
			protein-5 (HYDRL-5).		
778	AC005626	Homo sapiens	R29124_1	182	38
779	W88707	Homo sapiens	Secreted protein	126	56
			encoded by gene 174 clone HE9FB42.		
780	G03657	Homo sapiens	Human secreted	455	96
			protein, SEQ ID NO: 7738.		
781	AJ001616	Mus musculus	myeloid associated	201	36
			differentiation		
			protein		
782	Y64942	Homo sapiens	Human 5' EST	86	65
			related polypeptide		İ
			SEQ ID NO:1103.		
783	AL356276	Homo sapiens	bA367J7.2.1 (novel	845	91
			Immunoglobulin domains containing		İ
	ļ		protein (isoform		
		•	1))		
784	Y00876	Homo sapiens	Human LAPH-1	291	43
	1000.0	nomo bapiono	protein sequence.		"
785	G00270	Homo sapiens	Human secreted	603	100
			protein, SEQ ID NO:		
			4351.		
786	AF154121	Homo sapiens	sodium-dependent	864	100
			high-affinity		
			dicarboxylate		
			transporter		
787	Y29804	Homo sapiens	Human GABA B	83	42
			receptor subunit		
			HG20 peptide #6.		
788	AL080239	Homo sapiens	bG256022.1 (similar	599	100
			to IGFALS (insulin-		
			like growth factor		
	,		binding protein,		
			acid labile		
	l	<u> </u>	subunit))	l	<u> </u>

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	왕
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
789	AL031856	Schizosacchar omyces pombe	PUTATIVE GOLGI URIDINE DIPHOSPHATE-N- ACETYLGLUCOSAMINE TRANSPORTER	192	40
790	G03448	Homo sapiens	Human secreted protein, SEQ ID NO: 7529.	141	43
791	U81291	Xenopus laevis	oviductin	310	38
792	¥41332	Homo sapiens	Human secreted protein encoded by gene 25 clone HPIBO48.	295	50 .
793	L20315	Mus musculus	MPS1 protein	702	77
794	G01314	Homo sapiens	Human secreted protein, SEQ ID NO: 5395.	91	36
795	AF003136	Caenorhabditi s elegans	similar to 1-acyl- glycerol-3- phosphate acyltransferases	122	38
796	G00637	Homo sapiens	Human secreted protein, SEQ ID NO: 4718.	160	67
797	Y36144	Homo sapiens	Human secreted protein #16.	622	100
798	U09453	Cricetulus griseus	UDP-N- acetylglucosamine: dolichyl phosphate N-acetylglucosamine 1-phosphate transferase	178	66
799	¥76144	Homo sapiens	Human secreted protein encoded by gene 21.	633	100
800	¥73456	Homo sapiens	Human secreted protein clone yd145_1 protein sequence SEQ ID NO:134.	413	89
801	¥86540	Homo sapiens	Human gene 77- encoded protein fragment, SEQ ID NO:457.	443	96
802	<b>Ū49973</b>	Homo sapiens	ORF1; MER37; putative transposase similar to pogo element	311	53
803	M63573	Homo sapiens	secreted cyclophilin-like protein	700	88
804	AF091622	Homo sapiens	PHD finger protein	177	100

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
0.05	113.000		3		
805	W37869	Homo sapiens	Human protein comprising secretory signal amino acid sequence 6.	381	100
806	G03556	Homo sapiens	Human secreted protein, SEQ ID NO: 7637.	221	72
807	AF178941	Homo sapiens	ATP-binding cassette sub-family A member 2	583	87
808	Y91385	Homo sapiens	Human secreted protein sequence encoded by gene 40 SEQ ID NO:106.	786	100
809	Y00826	Rattus norvegicus	gp210 (AA 1-1886)	169	83
810	G03143	Homo sapiens	Human secreted protein, SEQ ID NO: 7224.	328	100
811	W00870	Homo sapiens	Polycystic kidney disease 1 (PKD1) polypeptide.	22446	99
812	¥73434	Homo sapiens	Human secreted protein clone yd51_1 protein sequence SEQ ID NO:90.	417	90
813	AB031996	Ralstonia sp. KN1	ferredoxin-like protein	94	44
814	AF201734	Mus musculus	testis specific serine kinase-3	800	87
815	Y01181	Homo sapiens	Polypeptide fragment encoded by gene 12.	68	55
816	¥76166	Homo sapiens	Human secreted protein encoded by gene 43.	724	94
817	AL109827	Homo sapiens	dJ309K20.2 (acrosomal protein ACR55 (similar to rat sperm antigen 4 (SPAG4)))	639	84
818	M62829	Homo sapiens	ETR103	137	53
819	Y38422	Homo sapiens	Human secreted protein.	526	100
820	AF119815	Homo sapiens	G-protein-coupled receptor	561	79
821	Y87101	Homo sapiens	Human secreted protein sequence SEQ ID NO:140.	628	100
822	M91463	Homo sapiens	glucose transporter	213	79

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	ક
OF NUCLEOTIDE	NUMBER			WATERMAN	IDENTITY
823	L34938	Rattus	ionotropic	618	90
		norvegicus	glutamate receptor		~ ~
824	W17846	Homo sapiens	Cytosolic	209	64
		-	phospholipase A2/B		
			(clone 19b		
			product).		
825	Y66722	Homo sapiens	Membrane-bound	221	67
			protein PRO1104.		
826	G02493	Homo sapiens	Human secreted	138	72
			protein, SEQ ID No:	}	
			6574.		
827	Y91423	Homo sapiens	Human secreted	671	54
			protein sequence		
	,		encoded by gene 11		
	<u></u>		SEQ ID NO:144.		
828	U78090	Rattus	potassium channel	502	80
		norvegicus	regulator 1		1
829	U08813	Oryctolagus	597 aa protein	906	84
	ļ	cuniculus	related to		
			Na/glucose		
020	3 70 70 0 0 0		cotransporters		
830	AJ272063	Homo sapiens	vanilloid receptor	630	90
831	U36898	Rattus	pheromone receptor	135	52
		norvegicus	VN6		
832	Z46973	Homo sapiens	phosphatidylinosito 1 3-kinase	396	80
833	Y95433	Homo sapiens	Human calcium	747	99
		1	channel SOC-2/CRAC-		
	Ì	ļ	1 C-terminal		
			polypeptide.		
834	AF132856	Homo sapiens	suppressor of G2	163	86
			allele of skp1		
			homolog		
835	AC006042	Homo sapiens	supported by human	195	87
	[	ĺ ,	ESTs	1	
			AI681256.1(NID:g489		
		-	1438),N32168.1(NID:		
			g1152567), and		
836	B01247	Home gand	genscan	1	
837	G03788	Homo sapiens	Human HE6 receptor.	371	45
0.57	903/08	Homo sapiens	Human secreted	196	59
			protein, SEQ ID NO:		
838	U70136	Womo ganiona	7869.	5054	
,	0/0136	Homo sapiens	megakaryocyte	6954	98
	}		stimulating factor;		
839	AF017153	Mus musculus	MSF	<u> </u>	
	PEAT 1722	MUSCUIUS	putative RNA	178	51
			helicase and RNA	]	
840	V31830	Wome comican	dependent ATPase	<u> </u>	
	131030	nomo saptens		244	. 56
840	Y31830	Homo sapiens	Human adult brain secreted protein nh899_8.	244	56

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	
OF	NUMBER		İ	WATERMAN	IDENTITY
NUCLEOTIDE				SCORE	
841	Y27593	Homo sapiens	Human secreted	437	81
			protein encoded by		
_			gene No. 27.	İ	1
842	G01984	Homo sapiens	Human secreted	196	74
			protein, SEQ ID NO:		
			6065.		
843	AL008723	Homo sapiens	dJ90G24.4 (SAAT1	183	92
	*		(low affinity		
			sodium glucose		
			cotransporter	}	
`			(sodium:solute	1	
0.1.1	3500005		symporter family)))		
844	AF068065	Cryptosporidi	GP900; mucin-like	263	47
0.1.5	7,00015	um parvum	glycoprotein		
845	Y00815	Homo sapiens	put. LAR preprotein	341	100
846	Y06816	Homo sapiens	(AA -16 to 1881) Human Notch2	1224	99
040	100010	HOMO Sapiens	(humN2) protein	1224	99
			sequence.		
847	AF104923	Homo sapiens	putative	293	95
047	AF104923	nomo saprens	transcription	293	95
			factor		
848	Y09945	Rattus	putative integral	589	53
-10	10000	norvegicus	membrane transport	303	33
*			protein		
849	AL157874	Schizosacchar	similar to yeast	146	40
		omyces pombe	SCT1 suppressor of		
			a choline transport		
			mutant		
850	R71003	Homo sapiens	Human neuronal	141	89
			calcium channel		
			subunit alpha 1c-1.		
851	X75756	Homo sapiens	protein kinase C mu	318	90
852	AF142676	Drosophila	sodium-hydrogen	366	48
		melanogaster	exchanger NHE1		L
853	Y45381	Homo sapiens	Human secreted	139	73
			protein fragment		
			encoded from gene		
054			28.		
854	G03789	Homo sapiens	Human secreted	121	60
	1	]	protein, SEQ ID NO:	1	
0.5.5	7755455	<u> </u>	7870.		
855	U65409	Yarrowia	Sla2p	109	25
0.5.6	147.047.5	lipolytica			
856	M19419	Mus musculus	proline-rich	109	36
057	1,500,55		salivary protein		
857	Y99355	Homo sapiens	Human PRO1295	667	98
	1		(UNQ664) amino acid		
			sequence SEQ ID		
050	W1 007 0		NO:54.		<u> </u>
858	W19919	Homo sapiens	Human Ksr-1 (kinase	211	86
859	V05426	Hama assissis	suppressor of Ras).	764	
	Y95436	Homo sapiens	Human calcium	764	84

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION .	SMITH-	ક
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
			channel SOC-3/CRAC-		
·			2.		
860	AF070066	Mus musculus	Citron-K kinase	628	97
861	AF286095	Homo sapiens	IL-22 receptor	933	100
862	AF020195	Mus musculus	pancreas sodium bicarbonate	475	68
			cotransporter		
863	G03712	Homo sapiens	Human secreted	240	100
663	903/12	HOMO Bapiens	protein, SEQ ID NO:	240	
864	AF195092	Homo sapiens	sialic acid-binding	288	87
		1	immunoglobulin-like		
			lectin-8		
865	AF208110	Homo sapiens	IL-17 receptor	2688	99
			homolog precursor		
866	L42338	Mus musculus	sodium channel 25	733	98
867	G02360	Homo sapiens	Human secreted protein, SEQ ID NO: 6441.	101	70
868	AF065215	Homo sapiens	cytosolic phospholipase A2 beta	290	42
869	L43631	Homo sapiens	scaffold attachment factor B	106	95
870	G03034	Homo sapiens	Human secreted protein, SEQ ID NO: 7115.	108	54
871	221514	Rattus norvegicus	integral membrane glycoprotein	84	47
872	AF097518	Homo sapiens	liver-specific transporter	147	40
873	AF288223	Drosophila melanogaster	Crossveinless 2	136	39
874	U90126	Bos taurus	ABC transporter	245	36
875	AF099988	Mus musculus	Ste-20 related kinase SPAK	103	34
876	¥70400	Homo sapiens	Human cell- signalling protein- 2.	220	86
877	¥36300	Homo sapiens	Human secreted protein encoded by gene 77.	1863	99
878	AF151074	Homo sapiens	HSPC240	193	29
879	Y94951	Homo sapiens	Human secreted	251	89
			protein clone dw78_1 protein sequence SEQ ID NO:108.		
880	AF165310	Homo sapiens	ATP cassette binding transporter 1	231	.31
881	AF252281	Mus musculus	Kelch-like 1 protein	256	58

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE		<i>,</i> .	,	SCORE	
882	Y00931	Homo sapiens	Prostate-tumour	1039	98
			derived antigen #4.		
883	Y27576	Homo sapiens	Human secreted	394	96
			protein encoded by		
			gene No. 10.		
884	U00009	Escherichia coli	yeeF	153	30
885	Y57945	Homo sapiens	Human transmembrane protein HTMPN-69.	1543	100
886	Y28678	Homo sapiens	Human cw272_7 secreted protein.	375	60
887	W95349	Homo sapiens	Human foetal brain secreted protein fh170 7.	377	89
888	Y87329	Homo sapiens	Human signal peptide containing protein HSPP-106 SEQ ID NO:106.	285	89
889	AL121845	Homo sapiens	dJ583P15.5.1 (novel protein (isoform 1))	1399	99
890	R75181	Homo sapiens	Partial peptide of human HMW kininogen fragment 1.2.	100	29
891	AF105365	Homo sapiens	K-Cl cotransporter KCC4	680	100
892	Y91644	Homo sapiens	Human secreted protein sequence encoded by gene 43 SEO ID NO:317.	673	95
893	S52051	Rattus sp.	neurotransmitter transporter	656	99
894	S52051	Rattus sp.	neurotransmitter transporter	617	94
895	R47120	Homo sapiens	Partial human H13 polypeptide.	343	60
896	Z98046	Homo sapiens	dJ1409.2 (Melanoma- Associated Antigen MAGE LIKE)	332	49
897	AJ006203	Oryctolagus cuniculus	capacitative calcium entry channel 2	740	99
898	AF156547	Mus musculus	putative E1-E2 ATPase	769	95
899	AC004076	Homo sapiens	R30217_1	788	98
900	D00099	Homo sapiens	Na,K-ATPase alpha- subunit	753	94
901	R27648	Homo sapiens	Human calcium channel 27980/10.	536	85
902	Y57955	Homo sapiens	Human transmembrane protein HTMPN-79.	606	100
903	AF155913	Mus musculus	putative E1-E2 ATPase	1039	85

TABLE 2

SEQ ID NO: OF	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-	* ************************************
NUCLEOTIDE	NONDER	}	· ·	WATERMAN SCORE	IDENTITY
904	¥73446	Homo sapiens	Human secreted protein clone yc27_1 protein sequence SEQ ID NO:114.	369	66
905	¥94903	Homo sapiens	Human secreted protein clone pt332_1 protein sequence SEQ ID NO:12.	3777	100
906	AB032470	Homo sapiens	seven transmembrane protein TM7SF3	2124	100
907	G00517	Homo sapiens	Human secreted protein, SEQ ID NO: 4598.	90	50
908	AF010144	Homo sapiens	neuronal thread protein AD7c-NTP	270	65
909	AF263912	Streptomyces noursei	NysA	113	25
910	¥53051	Homo sapiens	Human secreted protein clone dd119_4 protein sequence SEQ ID NO:108.	843	49
911	Y76179	Homo sapiens	Human secreted protein encoded by gene 56.	634	100
912	G00352	Homo sapiens	Human secreted protein, SEQ ID NO: 4433.	229	71
913	U93569	Homo sapiens	p40	110	32
914	G02639	Homo sapiens	Human secreted protein, SEQ ID NO: 6720.	65	46
915	¥94951	Homo sapiens	Human secreted protein clone dw78_1 protein sequence SEQ ID NO:108.	100	38
916	G03263	Homo sapiens	Human secreted protein, SEQ ID NO: 7344.	80	47
917	W74887	Homo sapiens	Human secreted protein encoded by gene 160 clone HCELB21.	273	69
918	Y73464	Homo sapiens	Human secreted protein clone y14_1 protein sequence SEQ ID NO:150.	982	90
919	AF064801	Homo sapiens	multiple membrane spanning receptor TRC8	551	32

TABLE 2

SEO ID NO:	TACCESSION	SPECIES	DESCRIPTION	SMITH-	ે ક
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE			1	SCORE	
920	Y87335	Homo sapiens	Human signal	622	99
520	107333	1100 04.201.2	peptide containing		
			protein HSPP-112	İ	ł
			SEQ ID NO:112.		
001	AK000496	Homo sapiens	unnamed protein	342	74
921	AK000496	HOMO Saprens	product	342	/ =
	-	<u> </u>	1 -	267	100
922	Y41360	Homo sapiens	Human secreted	367	100
			protein encoded by		
			gene 53 clone		1
			HJPAD75.		
923	G02872	Homo sapiens	Human secreted	328	75
		1	protein, SEQ ID NO:		
			6953.		
924	Y53881	Homo sapiens	A suppressor of	1489	100
			cytokine signalling		
			protein designated		
			HSCOP-1.	1	1
925	AC004144	Homo sapiens	R34001 1	193	60
926	AF119851	Homo sapiens	PRO1722	153	82
			Human secreted	82	57
927	G02654	Homo sapiens		02	3'
			protein, SEQ ID NO:	1	
			6735.	1	
928	Y30819	Homo sapiens	Human secreted	264	33
			protein encoded	1	
			from gene 9.		
929	G01691	Homo sapiens	Human secreted	66	43
			protein, SEQ ID NO:	1	
	İ		5772.		•
930	AF187845	Homo sapiens	small protein	431	100
			effector 1 of Cdc42		
931	AL390114	Leishmania	extremely	113	40
	1	major	cysteine/valine	i	
			rich protein		
932	AL080239	Homo sapiens	bG256022.1 (similar	1451	97
232	ALOUZZZ	nomo supremo	to IGFALS (insulin-		
•		}	like growth factor	.	
			binding protein,		
		1	acid labile		
			subunit))		
000	1,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<del>                                     </del>		1 224	100
933	W85613	Homo sapiens	Secreted protein	234	1.00
<u></u>			clone fm60_1.	<del> </del>	<del> </del>
934	AF009243	Homo sapiens	proline-rich Gla	223	42
·		<u></u>	protein 2		L
935	G03789	Homo sapiens	Human secreted	271	66
	Į.		protein, SEQ ID NO:	1	
		1	7870.		
936	AK000385	Homo sapiens	unnamed protein	193	64
			product		
937	AF010144	Homo sapiens	neuronal thread	270	65
,,,	71010144	TOMO Bapters	protein AD7c-NTP	1	1
930	301100E1	Vome contons	PRO1722	170	<del>  71</del>
938	AF119851	Homo sapiens			<u> </u>
939	Y07922	Homo sapiens	Human secreted	226	95
1		1	protein fragment	<u> </u>	<u> </u>

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	96
OF NUCLEOTIDE	NUMBER			WATERMAN SCORE	IDENTITY
			encoded from gene 71.		
940	Y41712	Homo sapiens	Human PRO724 protein sequence.	653	96
941	AF010144	Homo sapiens	neuronal thread protein AD7c-NTP	310	64
942	¥45318	Homo sapiens	Human secreted protein fragment encoded from gene 18.	502	98
943	Y07899	Homo sapiens	Human secreted protein fragment encoded from gene 48.	309	98
944	X92485	Plasmodium vivax	pval	185	51
945	AJ289133	Mus musculus	chondroitin 4-0- sulfotransferase	565	43
946 947	AF151074 U40829	Homo sapiens Saccharomyces	HSPC240 Weak similarity	1337	99
		cerevisiae	near C-terminus to RNA Polymerase beta subunit (Swiss Prot. accession number P11213) and CCAAT-binding transcription factor (PIR accession number A36368)		
948	¥87285	Homo sapiens	Human signal peptide containing protein HSPP-62 SEQ ID NO:62.	348	82
949	¥86230	Homo sapiens	Human secreted protein HKFBC53, SEQ ID NO:145.	368	80
950	AJ010346	Homo sapiens	RING-H2	333	87
951	256281	Homo sapiens	interferon regulatory factor 3	1573	81
952	Y57896	Homo sapiens	Human transmembrane protein HTMPN-20.	421	100
953	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	135	55
954	Y87103	Homo sapiens	Human secreted protein sequence SEQ ID NO:142.	83	50
955	¥87345	Homo sapiens	Human signal peptide containing protein HSPP-122 SEQ ID NO:122.	885	99
956	X81479	Homo sapiens	EMR1	1148	99

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH- WATERMAN SCORE	% IDENTITY
957	AF175406	Homo sapiens	transient receptor potential 4	4061	99
958	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	276	73
959	M63274	Plasmodium falciparum	malaria antigen	77	38
960	¥78795	Homo sapiens	Human antizuai-2 (AZ-2) amino acid sequence.	3384	83
961	AL133469	Streptomyces coelicolor A3(2)	putative secreted proline-rich protein	139	41
962	G03787	Homo sapiens	Human secreted protein, SEQ ID NO: 7868.	232	72
963	W74828	Homo sapiens	Human secreted protein encoded by gene 100 clone HLQAB52.	1016	99
964	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	226	58
965	X63893	Sus scrofa	alpha-stimulatory subunit of GTP- binding protein	319	86
966	AB033019	Homo sapiens	KIAA1193 protein	245	97
967	Y36156	Homo sapiens	Human secreted protein #28.	223	85
968	AF119851	Homo sapiens	PR01722	188	69
969	Y15224	Homo sapiens	Human receptor protein (HURP) 3 amino acid sequence.	214	42
970	G02754	Homo sapiens	Human secreted protein, SEQ ID NO: 6835.	81	62
971	U22376	Homo sapiens	alternatively spliced product using exon 13A	212	81
972	W74870	Homo sapiens	Human secreted protein encoded by gene 142 clone HTWCB92.	164	81
973	Y30817	Homo sapiens	Human secreted protein encoded from gene 7.	717	98
974	AF079529	Homo sapiens	cAMP-specific phosphodiesterase 8B; PDE8B1; 3',5'- cyclic nucleotide phosphodiesterase	2353	96
975	AF099028	Drosophila	putative	1061	52

TABLE 2

SEQ ID NO:	ACCESSION	SPECIES	DESCRIPTION	SMITH-	8
OF	NUMBER			WATERMAN	IDENTITY
NUCLEOTIDE				SCORE ·	
		melanogaster	transmembrane		
976	000000	<u> </u>	protein cmp44E		
976	G03786	Homo sapiens	Human secreted	179	72
			protein, SEQ ID NO:		
977	Y22495		7867.		
911	122495	Homo sapiens	Human secreted	1629	100
			protein sequence		
978	1274073	ļ	clone ch4_11.		
3/6	W74813	Homo sapiens	Human secreted	722	92
			protein encoded by		
	1		gene 85 clone		]
000	777000 400		HSDFV29.		
979	AK023408	Homo sapiens	unnamed protein	974	96
			product		
980	AF229178	Homo sapiens	leucine rich repeat	276	67
			and death domain	1	
			containing protein	İ	
981	G03797	Homo sapiens	Human secreted	198	56
	İ	i i	protein, SEQ ID NO:	1	
			7878.		
982	W74831	Homo sapiens	Human secreted	153	100
			protein encoded by		
	1	J	gene 103 clone		
			HEBDJ82.		
983	G01335	Homo sapiens	Human secreted	157	96
			protein, SEQ ID NO:		
			5416.	]	
984	Y73436	Homo sapiens	Human secreted	450	100
			protein clone	ĺ	
	]		ye43_1 protein		
			sequence SEQ ID		
985			NO:94.		
385	G00354	Homo sapiens	Human secreted	96	58
			protein, SEQ ID NO:		
986	7747.57.0		4435.		
986	Y41712	Homo sapiens	Human PRO724	639	88
007			protein sequence.		
987	Y57896	Homo sapiens	Human transmembrane	421	100
000			protein HTMPN-20.		
988	Y66691	Homo sapiens	Membrane-bound	716	65
			protein PRO809.		
989	AF090943	Homo sapiens	PRO0659	926	100
990	G00403	Homo sapiens	Human secreted	80	46
			protein, SEQ ID NO:		
			4484.		
991	G03411	Homo sapiens	Human secreted	62	57
			protein, SEQ ID NO:		
			7492.		
992	G00270	Homo sapiens	Human secreted	143	96
			protein, SEQ ID NO:		
			4351.		
993	AF026246	Homo sapiens	HERV-E integrase	361	80
994	Y36421	Homo sapiens	Fragment of human	83	37

TABLE 2

SEQ ID NO:	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH- WATERMAN	identity
NUCLEOTIDE	NOMBER			SCORE	IDENTITY
			secreted protein		
			encoded by gene 8.		
995	U22376	Homo sapiens	alternatively	175	78
			spliced product		1
			using exon 13A		
996	G03790	Homo sapiens	Human secreted	87	35
			protein, SEQ ID NO:	ĺ	
			7871.		
997	G00397	Homo sapiens	Human secreted	149	61
	ł		protein, SEQ ID NO:		1
			4478.		1
998	J02642	Homo sapiens	glyceraldehyde 3-	429	69
		[	phosphate		
			dehydrogenase (EC		
	<u> </u>		1.2.1.12)		
999	AF119851	Homo sapiens	PRO1722	204	50
1000	Y91423	Homo sapiens	Human secreted	393	53
·			protein sequence	<u>.</u>	
			encoded by gene 11		
			SEQ ID NO:144.		
1001	Y66695	Homo sapiens	Membrane-bound	1183	87
			protein PRO1344.		
1002	AF090931	Homo sapiens	PRO0483	149	68
1003	Y33261	Homo sapiens	Human p99 protein.	314	59
1004	U11494	Mus musculus	protein kinase	360	77
1005	AK021848	Homo sapiens	unnamed protein	186	69
			product		1
1006	Y13892	Homo sapiens	PI-3 kinase	233	97
1007	W48351	Homo sapiens	Human breast cancer	144	65
			related protein		
			BCRB2.		
1008	G03793	Homo sapiens	Human secreted	202	67
		_	protein, SEQ ID NO:		
			7874.		
1009	U91682	Aedes aegypti	vitelline membrane	88	42
	1		protein homolog		1

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
	}		REGION	REGION
1	1010	100	299	535
2	1011	1002	19	267
3	1012	1003	31	423
4	1013	1007	148	840
5	1014	1009	139	318
6	1015	1010	413	748
7	1016	1012	357	154
8	1017	1014	133	285
9	1018	1016	61	441
10	1019	102	269	832
11	1020	1021	148	342
12	1021	1022	45	452
13	1022	1035	222	779
14	1023	1038	222	779
15	1024	1042	735	517
16	1025	1049	120	320
17	1026	1055	195	395
18	1027	1061	13	189
19	1028	1070	972	1109
20	1029	1071	1504	1686
21	1030	1077	425	574
22	1031	108	46	501
23	1032	1088	1949	7240
24	1033	1092	119	571
25	1034	1095	118	564
26	1035	1096	110	373
27	1036	1098	66	353
28	1037	1099	1	417
29	1038	11	764	573
30	1039	1100	157	1014
31	1040	1102	1526	1813
32	1041	1103	1529	1338
33	1042	1104	685	1929
34	1043	1105	887	744
35	1044	1110	880	443
36	1045	1111	696	538
37	1046	1113	52	1272
38	1047	1117	1357	554
39	1048	1118	1478	1654
40	1049	112	482	712
41	1050	1121	3	1424
42	1051	1130	131	271
43	1052	1132	849	151
44	1053	1137	265	705
45	1054	1138	13	381
46	1055	1140	51	416
47	1056	1146	2389	2541
48	1057	1148	1517	738
49	1058	115	179	334
50	1059	1154	68	358
	1		<u> </u>	

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEO ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
	1	' '	REGION	REGION
51	1060	1155	34	330
52	1061	1157	242	433
53	1062	1160	410	856
54	1063	1161	154	342
55	1064	1163	202	477
56	1065	1167	72	272
57	1066	117	235	2
58	1067	1170	47	211
59	1068	1176	16	159
60	1069	1177	135	326
61	1070	118	1248	1466
62	1071	1183	431	886
63	1072	1187	191	529
64	1073	1189	1303	1148
65	1074	119	380	613
66	1075	1190	514	1272
67	1076	1192	1529	1338
68	1077	1197	93	533
69	1078	1199	227	391
70	1079	1202	117	407
71	1080	1204	12	413
72	1081	1205	49	603
73	1082	1216	487	1341
74	1083	1217	982	764
75	1084	1228	99	266
76	1085	1230	973	770
77	1086	1233	233	418
78	1087	1234	2959	2078
79	1088	1235	112	1542
80	1089	1239	3019	2822
81	1090	1242	1335	781
82	1091	1248	<del></del>	
83	1092	125	29 542	169 405
84	1092	1250		1572
85	<del></del>		1381	
86	1094	1252	480	226
87	1095		19	285
88	L '	1259		638
	1097	126	627	364
89	1098	1260	289	462
90	1099	1262	138	353
91	1100	1264	1159	1299
92	1101	1266	13	402
93	1102	1269	296	805
94	1103	127	212	397
95	1104	1270	126	374
96	1105	1272	2025	2396
97	1106	1273	1367	624
98	1107	1274	1108	746
99	1108	1275	919	1077
100	1109	1279	496	1272

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
		1 ,,	REGION	REGION
101	1110	1283	265	125
102	1111	1287	107	385
103	1112	1297	333	545
104	1113	13	187	47
105	1114	130	126	290
106	1115	1306	323	75
107	1116	1308	457	891
108	1117	1311	258	674
109	1118	1315	242	823
110	1119	1317	82	435
111	1120	1319	781	3306
112	1121	1323	1402	1671
113	1122	1329	279	665
114	1123	1336	37	765
115	1124	1337	177	389
116	1125	1338	887	744
117	1126	1339	248	
118	1127	1341	298	724
119	1128	1341	298	525
120	1129	1344		445
121	1130		23	370
122	1131	1345	160	402
123		1351	2737	2600
124	1132	1353	655	792
125	1133	1354	94	354
126	1134	1356	679	849
127	1135	1358	679	849
128	1136	1359	32	346
	1137	1361	271	426
129	1138	1362	637	1197
130	1139	1363	24	350
131	1140	1364	119	367
132	1141	1368	111	284
133	1142	1377	1221	1358
134	1143	1378	643	470
135	1144	138	99	539
136	1145	1382	994	686
137	1146	1384	34	264
138	1147	1386	124	477
139	1148	1389	1197	1
140	1149	139	94	294
141	1150	1390	1262	1053
142	1151	1393	1182	1325
143	1152	1394	1351	1542
144	1153	1395	229	411
145	1154	1396	923	1147
146	1155	1397	49	252
147	1156	1398	684	863
140	1157	1399	2613	286
148	110,	1 - 3 - 3 - 3	2013	400
149	1158	14	997	758

TABLE 3

NUCLEOTIDE         ACID         09/491,404         OF CODING REGION         OF REGION           151         1160         1406         735         123           152         1161         1407         967         716           153         1162         1408         75         314           154         1163         1409         101         313           155         1164         141         384         551           156         1165         1414         242         532           157         1166         142         158         15           158         1167         1421         604         142           159         1168         1422         1146         183           160         1169         1423         2657         329           161         1170         1424         315         163           162         1171         1426         39         509           163         1172         1427         892         686           164         1173         1428         395         619           165         1174         1430         284         514	5
NUCLEOTIDE         ACID         09/491,404         OF CODING REGION         OF REGION           151         1160         1406         735         123           152         1161         1407         967         716           153         1162         1408         75         314           154         1163         1409         101         313           155         1164         141         384         551           156         1165         1414         242         532           157         1166         142         158         15           158         1167         1421         604         142           159         1168         1422         1146         183           160         1169         1423         2657         329           161         1170         1424         315         163           162         1171         1426         39         509           163         1172         1427         892         686           164         1173         1428         395         619           165         1174         1430         284         514	REGION 5
151         1160         1406         735         123           152         1161         1407         967         716           153         1162         1408         75         314           154         1163         1409         101         313           155         1164         141         384         551           156         1165         1414         242         532           157         1166         142         158         15           158         1167         1421         604         142           159         1168         1422         1146         183           160         1169         1423         2657         329           161         1170         1424         315         163           162         1171         1426         39         509           163         1172         1427         892         686           164         1173         1428         395         619           165         1174         1430         284         514           166         1175         1432         178         2           167	5 5 5
152         1161         1407         967         716           153         1162         1408         75         314           154         1163         1409         101         313           155         1164         141         384         551           156         1165         1414         242         532           157         1166         142         158         15           158         1167         1421         604         142           159         1168         1422         1146         183           160         1169         1423         2657         329           161         1170         1424         315         163           162         1171         1426         39         509           163         1172         1427         892         686           164         1173         1428         395         619           165         1174         1430         284         514           166         1175         1432         178         2           167         1176         1433         1136         972           168	5
153         1162         1408         75         314           154         1163         1409         101         313           155         1164         141         384         551           156         1165         1414         242         532           157         1166         142         158         15           158         1167         1421         604         1423           159         1168         1422         1146         183           160         1169         1423         2657         329           161         1170         1424         315         163           162         1171         1426         39         509           163         1172         1427         892         686           164         1173         1428         395         619           165         1174         1430         284         514           166         1175         1432         178         2           167         1176         1433         1136         972           168         1177         1435         1283         154           169	5
154         1163         1409         101         313           155         1164         141         384         551           156         1165         1414         242         532           157         1166         142         158         15           158         1167         1421         604         142:           159         1168         1422         1146         183:           160         1169         1423         2657         329:           161         1170         1424         315         163           162         1171         1426         39         509           163         1172         1427         892         686           164         1173         1428         395         619           165         1174         1430         284         514           166         1175         1432         178         2           167         1176         1433         1136         972           168         1177         1435         1283         154           170         1179         144         55         219           171	5
155         1164         141         384         551           156         1165         1414         242         532           157         1166         142         158         15           158         1167         1421         604         142           159         1168         1422         1146         183           160         1169         1423         2657         329           161         1170         1424         315         163           162         1171         1426         39         509           163         1172         1427         892         686           164         1173         1428         395         619           165         1174         1430         284         514           166         1175         1432         178         2           167         1176         1433         1136         972           168         1177         1435         1283         154           169         1178         1436         1669         223           170         1179         144         55         219           171	5
156         1165         1414         242         532           157         1166         142         158         15           158         1167         1421         604         1422           159         1168         1422         1146         183           160         1169         1423         2657         329           161         1170         1424         315         163           162         1171         1426         39         509           163         1172         1427         892         686           164         1173         1428         395         619           165         1174         1430         284         514           166         1175         1432         178         2           167         1176         1433         1136         972           168         1177         1435         1283         154           169         1178         1436         1669         223           170         1179         144         55         219           171         1180         1440         363         121           172	5
157         1166         142         158         15           158         1167         1421         604         142           159         1168         1422         1146         183           160         1169         1423         2657         329           161         1170         1424         315         163           162         1171         1426         39         509           163         1172         1427         892         686           164         1173         1428         395         619           165         1174         1430         284         514           166         1175         1432         178         2           167         1176         1433         1136         972           168         1177         1435         1283         154           169         1178         1436         1669         223           170         1179         144         55         219           171         1180         1440         363         121           172         1181         1441         1991         219           173	5
158       1167       1421       604       1422         159       1168       1422       1146       1833         160       1169       1423       2657       3293         161       1170       1424       315       163         162       1171       1426       39       509         163       1172       1427       892       686         164       1173       1428       395       619         165       1174       1430       284       514         166       1175       1432       178       2         167       1176       1433       1136       972         168       1177       1435       1283       154         169       1178       1436       1669       223         170       1179       144       55       219         171       1180       1440       363       121         172       1181       1441       1991       219         173       1182       1443       1765       305         174       1183       1445       1023       865         175       1184 <t< td=""><td>5</td></t<>	5
159       1168       1422       1146       183         160       1169       1423       2657       329         161       1170       1424       315       163         162       1171       1426       39       509         163       1172       1427       892       686         164       1173       1428       395       619         165       1174       1430       284       514         166       1175       1432       178       2         167       1176       1433       1136       972         168       1177       1435       1283       154         169       1178       1436       1669       223         170       1179       144       55       219         171       1180       1440       363       121         172       1181       1441       1991       219         173       1182       1443       1765       305         174       1183       1445       1023       865         175       1184       1446       5692       585         176       1185	5
160       1169       1423       2657       329         161       1170       1424       315       163         162       1171       1426       39       509         163       1172       1427       892       686         164       1173       1428       395       619         165       1174       1430       284       514         166       1175       1432       178       2         167       1176       1433       1136       972         168       1177       1435       1283       154         169       1178       1436       1669       223         170       1179       144       55       219         171       1180       1440       363       121         172       1181       1441       1991       219         173       1182       1443       1765       305         174       1183       1445       1023       865         175       1184       1446       5692       585         176       1185       1447       2959       207         177       1186	
161       1170       1424       315       163         162       1171       1426       39       509         163       1172       1427       892       686         164       1173       1428       395       619         165       1174       1430       284       514         166       1175       1432       178       2         167       1176       1433       1136       972         168       1177       1435       1283       154         169       1178       1436       1669       223         170       1179       144       55       219         171       1180       1440       363       121         172       1181       1441       1991       219         173       1182       1443       1765       305         174       1183       1445       1023       865         175       1184       1446       5692       585         176       1185       1447       2959       207         177       1186       1448       775       945         178       1187       1	5
162       1171       1426       39       509         163       1172       1427       892       686         164       1173       1428       395       619         165       1174       1430       284       514         166       1175       1432       178       2         167       1176       1433       1136       972         168       1177       1435       1283       154         169       1178       1436       1669       223         170       1179       144       55       219         171       1180       1440       363       121         172       1181       1441       1991       219         173       1182       1443       1765       305         174       1183       1445       1023       865         175       1184       1446       5692       585         176       1185       1447       2959       2076         177       1186       1448       775       945         178       1187       1451       858       143         179       1188	
163       1172       1427       892       686         164       1173       1428       395       619         165       1174       1430       284       514         166       1175       1432       178       2         167       1176       1433       1136       972         168       1177       1435       1283       154         169       1178       1436       1669       223         170       1179       144       55       219         171       1180       1440       363       121         172       1181       1441       1991       219         173       1182       1443       1765       305         174       1183       1445       1023       865         175       1184       1446       5692       585         176       1185       1447       2959       2076         177       1186       1448       775       945         178       1187       1451       858       143         179       1188       1453       1370       723         180       1189 <t< td=""><td></td></t<>	
164       1173       1428       395       619         165       1174       1430       284       514         166       1175       1432       178       2         167       1176       1433       1136       972         168       1177       1435       1283       154         169       1178       1436       1669       223         170       1179       144       55       219         171       1180       1440       363       121         172       1181       1441       1991       219         173       1182       1443       1765       305         174       1183       1445       1023       865         175       1184       1446       5692       585         176       1185       1447       2959       2076         177       1186       1448       775       945         178       1187       1451       858       143         179       1188       1453       1370       723         180       1189       1455       480       100         181       1190 <t< td=""><td></td></t<>	
165       1174       1430       284       514         166       1175       1432       178       2         167       1176       1433       1136       972         168       1177       1435       1283       154         169       1178       1436       1669       223         170       1179       144       55       219         171       1180       1440       363       121         172       1181       1441       1991       219         173       1182       1443       1765       305         174       1183       1445       1023       865         175       1184       1446       5692       585         176       1185       1447       2959       207         177       1186       1448       775       945         178       1187       1451       858       143         179       1188       1453       1370       723         180       1189       1455       480       100         181       1190       1457       278       451         182       1191 <td< td=""><td></td></td<>	
165       1174       1430       284       514         166       1175       1432       178       2         167       1176       1433       1136       972         168       1177       1435       1283       154         169       1178       1436       1669       223         170       1179       144       55       219         171       1180       1440       363       121         172       1181       1441       1991       219         173       1182       1443       1765       305         174       1183       1445       1023       865         175       1184       1446       5692       585         176       1185       1447       2959       207         177       1186       1448       775       945         178       1187       1451       858       143         179       1188       1453       1370       723         180       1189       1455       480       100         181       1190       1457       278       451         182       1191 <td< td=""><td></td></td<>	
166       1175       1432       178       2         167       1176       1433       1136       972         168       1177       1435       1283       154         169       1178       1436       1669       223         170       1179       144       55       219         171       1180       1440       363       121         172       1181       1441       1991       219         173       1182       1443       1765       305         174       1183       1445       1023       865         175       1184       1446       5692       585         176       1185       1447       2959       207         177       1186       1448       775       945         178       1187       1451       858       143         179       1188       1453       1370       723         180       1189       1455       480       100         181       1190       1457       278       451         182       1191       1459       824       561         183       1192 <td< td=""><td></td></td<>	
168       1177       1435       1283       154         169       1178       1436       1669       223         170       1179       144       55       219         171       1180       1440       363       121         172       1181       1441       1991       219         173       1182       1443       1765       305         174       1183       1445       1023       865         175       1184       1446       5692       585         176       1185       1447       2959       207         177       1186       1448       775       945         178       1187       1451       858       143         179       1188       1453       1370       723         180       1189       1455       480       100         181       1190       1457       278       451         182       1191       1459       824       561         183       1192       1460       56       463	
169         1178         1436         1669         223           170         1179         144         55         219           171         1180         1440         363         121           172         1181         1441         1991         219           173         1182         1443         1765         305           174         1183         1445         1023         865           175         1184         1446         5692         585           176         1185         1447         2959         207           177         1186         1448         775         945           178         1187         1451         858         143           179         1188         1453         1370         723           180         1189         1455         480         100           181         1190         1457         278         451           182         1191         1459         824         561           183         1192         1460         56         463	
170     1179     144     55     219       171     1180     1440     363     121       172     1181     1441     1991     219       173     1182     1443     1765     305       174     1183     1445     1023     865       175     1184     1446     5692     585       176     1185     1447     2959     2076       177     1186     1448     775     945       178     1187     1451     858     143       179     1188     1453     1370     723       180     1189     1455     480     100       181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	0
171     1180     1440     363     121       172     1181     1441     1991     219       173     1182     1443     1765     305       174     1183     1445     1023     865       175     1184     1446     5692     585       176     1185     1447     2959     2076       177     1186     1448     775     945       178     1187     1451     858     1436       179     1188     1453     1370     723       180     1189     1455     480     100       181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	5
172     1181     1441     1991     219       173     1182     1443     1765     305       174     1183     1445     1023     865       175     1184     1446     5692     585       176     1185     1447     2959     2079       177     1186     1448     775     945       178     1187     1451     858     1439       179     1188     1453     1370     723       180     1189     1455     480     100       181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	
173     1182     1443     1765     305       174     1183     1445     1023     865       175     1184     1446     5692     585       176     1185     1447     2959     207       177     1186     1448     775     945       178     1187     1451     858     143       179     1188     1453     1370     723       180     1189     1455     480     100       181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	
174     1183     1445     1023     865       175     1184     1446     5692     585       176     1185     1447     2959     2079       177     1186     1448     775     945       178     1187     1451     858     1439       179     1188     1453     1370     723       180     1189     1455     480     100       181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	7
175     1184     1446     5692     585       176     1185     1447     2959     2073       177     1186     1448     775     945       178     1187     1451     858     1433       179     1188     1453     1370     723       180     1189     1455     480     100       181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	4
176     1185     1447     2959     2076       177     1186     1448     775     945       178     1187     1451     858     1436       179     1188     1453     1370     723       180     1189     1455     480     100       181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	<del></del>
177     1186     1448     775     945       178     1187     1451     858     1433       179     1188     1453     1370     723       180     1189     1455     480     100       181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	9
178     1187     1451     858     143       179     1188     1453     1370     723       180     1189     1455     480     100       181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	В
179     1188     1453     1370     723       180     1189     1455     480     100       181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	
180     1189     1455     480     100       181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	Ō
181     1190     1457     278     451       182     1191     1459     824     561       183     1192     1460     56     463	
182     1191     1459     824     561       183     1192     1460     56     463	7
183 1192 1460 56 463	
104	•
184   1193   1461   184   480	
185 1194 1462 486 635	
186 1195 1465 319 492	
187 1196 1466 398 3	
188 1197 1468 262 453	
189 1198 1476 526 684	
190 1199 148 271 420	
191 1200 1482 568 714	•
192 1201 1484 203 340	
193 1202 1486 2185 119	0
194 1203 1492 438 291	2
195 1204 1493 82 225	
196 1205 1501 210 347	
197 1206 1508 1364 110	
198 1207 1509 56 613	
199 1208 1512 828 965	1
200 1209 1515 3216 381	1

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
		00, 101, 101	REGION	REGION
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202	1211	1522	1709	1029
203	1212	1524	614	799
204	1213	1526	3917	4081
205	1214	1529	221	2146
206	1215	1530	644	390
207	1216	1532	16	1224
208	1217	1532	885	1031
209	<u> </u>			
210	1218	1536	245	1156
	1219	1538	1617	4994
211	1220	154	97	234
212	1221	1540	4325	4158
213	1222	1541	2020	2778
214	1223	1544	595	3168
215	1224	1545	328	534
216	1225	1548	47	211
217	1226	1550	49	201
218	1227	1552	418	558
219	1228	1555	509	330
220	1229	1557	699	854
221	1230	1561	847	1932
222	1231	1563	775	933
223	1232	1565	286	453
224	1233	1567	807	974
225	1234	1568	1227	1601
226	1235	1569	113	328
227	1236	157	145	2
228	1237	1570	222	845
229	1238	1572	167	685
230	1239	1574	97	1167
231	1240	1575	581	2701
232	1241	1577	1246	953
233	1242	1578	1440	175
234	1243	1579	4738	4601
235	1244	1580	1431	1568
236	1245	1581	2491	3222
237	1246	1584	463	2157
238	1247	1585	156	2366
239	1248	1586	167	691
240	1249	1587	102	305.
241	1250	1589	1157	1783
242	1251	159	812	639
243	1252	1592	270	521
244	1253	1593	92	310
245	1254	1594	814	188
246	1255	1595	101	2290
247	1256	1597	119	010
248	1256	1598	178	1398
249	1258	1600	2937	l
250	L		<u> </u>	2578
230	1259	1604	47	526

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
		, , , , , , , , , , , , , , , , , , , ,	REGION	REGION
251	1260	1606	2204	1872
252	1261	1608	235	603
253	1262	1609	156	2366
254	1263	1611	1992	2135
255	1264	1614	968	786
256	1265	1615	2578	2751
257	1266	1616	6256	5813
258	1267	1617	29	709
259	1268	1619	1123	4071
260	1269	1621	581	2704
261	1270	1626	43	321
262	1271	1629	3616	1673
263	1272	163	509	183
264	1273	1630	81	248
265	1274	1631	9	572
266	1275	1633	2565	2807
267	1276	1634	2373	2510
268	1277	1635	3216	4508
269	1278	1636	4239	4081
270	1279	1642	4238	4020
271	1280	1643	152	304
272	1281	1644	47	478
273	1282	1645	121	921
274	1283	1646	3815	3030
275	1284	1647	335	186
276	1285	1649	6	974
277	1286	1654	34	951
278	1287	1655	491	1387
279	1288	1656	78	560
280	1289	1657	1431	1568
281	1290	1658	2373	1015
282	1291	1670	236	3
283	1292	1673	95	1342
284	1293	1685	2124	1786
285	1294	1690	245	415
286	1295	1691	977	774
287	1296	1699	50	247
288	1297	17	282	112
289	1298	1710	943	239
290	1299	1711	127	318
291	1300	1718	99	338
292	1300	1718	122	382
293	1301	L	33	461
294	1302	172	<u> </u>	
295	1303	1720	180	1
296		1722	160 175	327
296	1305	1726	L,	363
	1306	1737	84	497
298	1307	1738	188	379
299	1308	174	138	332
300	1309	1743	560	784

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
ROCEEDITE	ACID	05, 151, 101	REGION	REGION
301	1310	1747	1824	1961
302	1311	1748	97	411
303	1312	1749	151	492
304	1313	177	59	322
305	1314	1776	68	262
306	1315	1779	43	255
307	1316	178	58	399
308	1317	1781	1179	907
309	1318	1786	579	385
310		1789	56	193
	1319		218	78
311	1320	180	.l	L
312	1321	1800	230	394
313	1322	1801	1778	876
314	1323	181	174	428
315	1324	1829	179	42
316	1325	1846	525	785
317	1326	1848	5632	5838
318	1327	185	92	400
319	1328	1850	178	333
320	1329	186	699	1310
321	1330	1860	8	604
322	1331	1868	376	618
323	1332	187	148	366
324	1333	1870	233	388
325	1334	1872	12	206
326	1335	188	181	516
327	1336	1884	549	863
328	1337	1886	128	298
329	1338	189	28	204
330	1339	1891	11246	11097
331	1340	1895	175	417
332	1341	1897	221	400
333	1342	1899	744	890
334	1343	191	77	286
335	1344	1914	403	699
336	1345	192	8	343
337	1346	1947	656	1735
338	1347	1948	32	283
339	1348	195	129	323
340	1349	196	122	295
341	1350	1962	554	733
342	1351	197	110	277
343	1352	1976	348	2450
344	1353	198	93	239
345	1354	1980	137	310
346	1355	2	916	13698
347	1356	20	112	303
348	1357	2005	88	420
349	1358	2007	525	385
350	1359	2007	266	484
1 330	1200	2000	400	1 202

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
			REGION	REGION
351	1360	2013	64	234
352	1361	2016	99	329
353	1362	2018	84	401
354	1363	202	300	130
355	1364	2022	1240	1016
356	1365	2029	191	364
357	1366	2037	231	404
358	1367	2043	3206	3349
359	1368	2047	169	456
360	1369	2048	295	522
361	1370	2049	533	769
362	1371	205	4	684
363	1372	2051	403	699
364	1373	2055	173	379
365	1374	2056	270	1157
366	1375	2061	949	725
367	1376	2064	127	309
368	1377	2065	248	577
369	1378	2070	204	344
370	1379	2071	374	793
371	1380	2074	945	796
372	1381	2074	300	67
373	1382	2078	416	586
374	1383	2081	316	507
375	1384	2082	20	220
376	1385	209	19	168
377	1386	210	27	395
378	1387	2102	258	452
379	1388	2104	1706	1539
380	1389	211	84	311
381	1390	212	677	231
382	1391	2120	40	414
383	1392	214	101	268
384	1393	2140	213	377
385	1394	2161	216	368
386	1395	2162	106	420
387	1396	2164	104	250
388	1397	217	333	22
389	1398	218	80	325
390	1398	218	709	506
391	<del></del>		L	
392	1400	2196	158	319
393	1401	2198	469	1164
	1402	22	843	700
394	1403	2214	980	822
395	1404	2215	49	318
396	1405	2225	544	1974
397	1406	223	185	21
398	1407	2233	116	313
399	1408	224	189	16
400	1409	2240	2740	2525

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEO ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
NOCHEOTIDE	ACID	09/491,404		1
401	1410	2244	REGION	REGION 1647
402	1411			
		2254	72	317
403	1412	226	335	120
404	1413	2260	562	738
405	1414	2268	300	67
406	1415	227	103	615
407	1416	2273	114	344
408	1417	2275	239	985
409	1418	2276	1358	1164
410	1419	2288	56	1459
411	1420	2291	83	532
412	1421	2296	264	530
413	1422	2298	533	781
414	1423	2300	1684	1845
415	1424	2305	8	226
416	1425	231	86	820
417	1426	232	361	1920
418	1427	233	150	467
419	1428	2331	334	2856
420	1429	2334	168	953
421	1430	2341	198	395
422	1431	2344	122	1432
423	1432	2346	1345	1187
424	1433	2348	502	729
425	1434	235	338	844
426	1435	2351	228	713
427	1436	236	232	2
428	1437	2360	1611	1357
429	1438	2362	36	263
430	1439	2364	294	1568
431	1440	2365	103	312
432	1441	2378	209	5281
433	1442	238	53	511
434	1443	2380	207	380
435	1444	239	457	663
436	1445	2392	176	2653
437	1446	2399	940	2040
438	1447	2405	144	380
439	1448	2407	1875	2702
440	1449	2415	1927	
441	<u> </u>			137
442	1450	242	1813	986
	1451	2421	43	405
443	1452	2423	1556	1413
444	1453	2424	673	1041
445	1454	2432	295	1275
446	1455	2438	607	437
447	1456	2444	294	437
448	1457	2447	212	1588
449	1458	2448	52	1440
450	1459	2449	637	1197

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
			REGION	REGION
451	1460	245	208	876
452	1461	2450	3740	4369
453	1462	2453	222	389
454	1463	246	566	763
455	1464	2466	179	778
456	1465	2471	532	669
457	1466	2473	817	650
458	1467	2474	236	1333
459	1468	2476	173	3
460	1469	248	331	2
461	1470	2486	709	885
462	1471	249	88	456
463	1472	2496	107	1054
464	1473	2498	413	607
465	1474	2501	103	267
466	1475	2503	334	717
467	1476	2506	3740	4369
468	1477	2509	188	18
469	1478	2512	78	368
470	1479	2514	16	354
471	1480	2523	53	325
472	1481	2526	223	384
473	1482	2532	596	763
474	1483	2533	62	667
475	1484	2535	89	1519
476	1485	2537	175	375
477	1486	254	299	21
478	1487	2540	553	816
479	1488	2546	1905	1102
480	1489	2555	2046	4541
481	1490	2559	569	733
482	1491	256	9	410
483	1492	2560	288	76
484	1493	2565	3269	3502
485	1494	2569	116	478
486	1495	257	203	475
487	1496	2571	2763	2548
488	1497	2572	65	652
489	1498	2575	70	294
490	1499	2576	1195	1010
491	1500	258	434	21
492	1501	2580	155	400
493	1502	2591	53	214
494	1503	2592	163	348
495	1504	26	261	398
496	1505	2605	277	420
497	1506	261	29	598
498	1507	2614	1331	1510
499	1508	2617	235	378
500	1509	262	204	458
				<del></del>

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
	11020	05, 151, 101	REGION	REGION
501	1510	2624	254	418
502	1511	263	247	570
503	1512	264	184	540
504	1513	2643	1108	4026
505	1514	2644	305	535
506	1515	2645	1952	1509
507	1516	2647	1225	404
508	1517	2648	41	778
509		265		
	1518		53	418
510	1519	2650	190	936
511	1520	2658	1576	2451
512	1521	2659	44	430
513	1522	266	350	153
514	1523	2663	785	1177
515	1524	2665	395	550
516	1525	2666	41	778
517	1526	2667	244	384
518	1527	2668	174	527
519	1528	2669	27	302
520	1529	2678	1172	960
521	1530	2684	178	432
522	1531	269	341	520
523	1532	2699	1241	1083
524	1533	2701	402	2624
525	1534	2702	28	177
526	1535	2706	1108	4026
527	1536	2707	1240	1016
528	1537	271	59	346
529	1538	2714	34	987
530	1539	2715	1117	647
531	1540	2717	25	429
532	1541	2718	1670	1885
533	1542	2719	31	1137
534	1543	272	6	152
535	1544	2726	230	592
536	1545	2728	578	369
537	1546	2731	193	366
538	1547	2735	495	301
539	1548	274	352	119
540	1549	2741	94	255
541	1550	2798	1031	1240
542	1551	28	54	725
543	1552	2803	204	374
544	1553	2809	216	938
545	1554	2822	280	447
546	1555	2823	197	
547	1556	2824		388
548	1557	<u> </u>	224	12
549	1557	2826	79	456
550		2828	24	428
550	1559	2838	90	698

TABLE 3

. ~ .	51 52 53 54 55 56 57 58 59 70	SEQ ID NO: IN USSN 09/491,404  284 2847 285 2852 2854 2855 2856 2857 2859 286 2860 2864	START NUCLEOTIDE OF CODING REGION 21 113 146 233 830 336 384 437 1295 30 2618	STOP NUCLEOTIDE OF CODING REGION 197 262 292 439 988 1043 614 748 1158
NUCLEOTIDE         551       156         552       156         553       156         554       156         555       156         557       156         558       156         559       156         560       156         561       157         563       157	ACID  50 51 52 53 54 55 66 57 58 59 70	09/491,404  284  2847  285  2852  2854  2855  2856  2857  2859  286	OF CODING REGION  21  113  146  233  830  336  384  437  1295  30	OF CODING REGION 197 262 292 439 988 1043 614 748 1158
551     156       552     156       553     156       554     156       555     156       557     156       558     156       559     156       560     156       561     157       563     157	50 51 52 53 54 55 56 57 58 59 70	284 2847 285 2852 2854 2855 2856 2857 2859 286 2860	REGION 21 113 146 233 830 336 384 437 1295	197 262 292 439 988 1043 614 748 1158
552     156       553     156       554     156       555     156       557     156       558     156       559     156       560     156       561     157       563     157	51 52 53 54 55 56 57 58 59 70	2847 285 2852 2854 2855 2856 2857 2859 286 2860	21 113 146 233 830 336 384 437 1295	262 292 439 988 1043 614 748 1158
552     156       553     156       554     156       555     156       557     156       558     156       559     156       560     156       561     157       563     157	51 52 53 54 55 56 57 58 59 70	2847 285 2852 2854 2855 2856 2857 2859 286 2860	113 146 233 830 336 384 437 1295	262 292 439 988 1043 614 748 1158
553     156       554     156       555     156       556     156       557     156       558     156       559     156       560     156       561     157       563     157	52 53 54 55 56 57 58 59 70	285 2852 2854 2855 2856 2857 2859 286 2860	146 233 830 336 384 437 1295	292 439 988 1043 614 748 1158
554     156       555     156       556     156       557     156       558     156       559     156       560     156       561     157       563     157	53 54 55 56 57 58 59 70	2852 2854 2855 2856 2857 2859 286 2860	233 830 336 384 437 1295	439 988 1043 614 748 1158 179
555     156       556     156       557     156       558     156       559     156       560     156       561     157       563     157	54 55 56 57 58 59 70	2854 2855 2856 2857 2859 286 2860	830 336 384 437 1295 30	988 1043 614 748 1158
556     156       557     156       558     156       559     156       560     156       561     157       562     157       563     157	55 56 57 58 59 70	2855 2856 2857 2859 286 2860	336 384 437 1295 30	1043 614 748 1158 179
557     156       558     156       559     156       560     156       561     157       562     157       563     157	56 57 58 59 70	2856 2857 2859 286 2860	384 437 1295 30	748 1158 179
558     156       559     156       560     156       561     157       562     157       563     157	57 58 59 70	2857 2859 286 2860	437 1295 30	748 1158 179
559     156       560     156       561     157       562     157       563     157	58 59 70 71	2859 286 2860	1295 30	1158 179
560         156           561         157           562         157           563         157	59 70 71	286 2860	30	179
561     157       562     157       563     157	70 71	2860		
562     157       563     157	71		2010	2469
563 157		2004	1325	1176
L		2867	1034	795
		288	190	345
565 157		2884	856	257
				167
566 157		2886	15	
567 157		2891	34	405
568 157		2900	104	2683
569 157		2901	193	366
570 157		2902	91	1806
571 158		2907	268	498
572 158		2908	83	1564
573 158		2910	2131	3117
574 158		2915	715	861
575 158		2916	52	2064
576 158		2919	62	1015
577 158		292	615	854
578   158		2923	332	1279
579 158		2924	264	422
580 158		2925	122	1432
581 159		2930	195	341
582 159		2931	221	3
583 159		2934	1642	1827
584 159	93	2937	38	421
585 159	94	2940	520	383
586 159		2944	325	68
587 159		295	49	255
588 159	97	2950	226	59
589 159		2951	110	400
590 159	99	2955	303	641
591 160	00	2957	365	673
592 160	01	2964	96	347
593 160	02	2967	738	466
594 160	03	2968	222	428
595 160	04	2969	365	117
596 160	)5	2970	314	643
597 160		2973	961	1176
598 160		2975	975	799
599 160		2979	89	442
600 160		298	152	3

TABLE 3

OF NUCLEOTIDE         OF AMINO ACID         IN USSN 09/491,404         NUCLEOTIDE OF CODING REGION         AGE           609         1614         1614         3002         1607         2265         339         71         217         217         217         217         217         609         1618         3051         56         268         387         611         1619         3051         56         268         612         1612         307         9	SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
NUCLEOTIDE         ACID         09/491,404         OF CODING REGION         OF CODING REGION           601         1610         2991         112         261           602         1611         2995         201         368           603         1612         3         13559         13335           604         1613         30         176         751           605         1614         3002         1807         2265           606         1615         3005         339         743           607         1616         3023         64         243           608         1617         3039         71         217           609         1618         304         50         334           610         1619         305         226         387           611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634 <td>-<del>-</del></td> <td></td> <td></td> <td>1</td> <td>1</td>	- <del>-</del>			1	1
601         1610         2991         112         261           602         1611         2995         201         368           603         1612         3         13559         13335           604         1613         30         176         751           605         1614         3002         1807         2265           606         1615         3005         339         743           607         1616         3023         64         243           608         1617         3039         71         217           609         1618         304         50         334           610         1619         305         226         387           611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617		l .	l .		
601         1610         2991         112         261           602         1611         2995         201         368           603         1612         3         13559         13335           604         1613         30         176         751           605         1614         3002         1807         2265           606         1615         3005         339         743           607         1616         3023         64         243           608         1617         3039         71         217           609         1618         304         50         334           610         1619         305         226         387           611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617		1.55-	) 03/132/101	1	1
602         1611         2995         201         368           603         1612         3         13559         13335           604         1613         30         176         751           605         1614         3002         1807         2265           606         1615         3005         339         743           607         1616         3023         64         243           608         1617         3039         71         217           609         1618         304         50         334           610         1619         305         226         387           611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618	601	1610	2991		
603         1612         3         13559         13335           604         1613         30         176         751           605         1614         3002         1807         2265           606         1615         3005         339         743           607         1616         3023         64         243           608         1617         3039         71         217           609         1618         304         50         334           610         1619         305         226         387           611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         <	602		ļ		
604         1613         30         176         751           605         1614         3002         1807         2265           606         1615         3005         339         743           607         1616         3023         64         243           608         1617         3039         71         217           609         1618         304         50         334           610         1619         305         226         387           611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620 <td< td=""><td></td><td></td><td></td><td></td><td></td></td<>					
605         1614         3002         1807         2265           606         1615         3005         339         743           607         1616         3023         64         243           608         1617         3039         71         217           609         1618         304         50         334           610         1619         305         226         387           611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           621 <t< td=""><td></td><td></td><td><u> </u></td><td></td><td></td></t<>			<u> </u>		
606         1615         3005         339         743           607         1616         3023         64         243           608         1617         3039         71         217           609         1618         304         50         334           610         1619         305         226         387           611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           621         1630         3105         188         328           622		<u> </u>			
607         1616         3023         64         243           608         1617         3039         71         217           609         1618         304         50         334           610         1619         305         226         387           611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           621         1630         3105         188         328           622         1631         3107         177         413           623					
608         1617         3039         71         217           609         1618         304         50         334           610         1619         305         226         387           611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           621         1630         3105         188         328           622         1631         3107         177         413           623         1632         3109         184         327           624 <td< td=""><td></td><td></td><td><u></u></td><td></td><td></td></td<>			<u></u>		
609         1618         304         50         334           610         1619         305         226         387           611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           621         1630         3105         188         328           622         1631         3107         177         413           623         1632         3109         184         327           624         1633         3114         70         243           625 <td< td=""><td></td><td>L</td><td></td><td>·</td><td>L</td></td<>		L		·	L
610					
611         1620         3051         56         268           612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           622         1631         3105         188         328           622         1631         3107         177         413           623         1632         3109         184         327           624         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627		L	<u> </u>		1
612         1621         307         9         278           613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           621         1630         3105         188         328           622         1631         3107         177         413           622         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627         1636         3119         70         222           628         1637         3120         163         531           629			<u> </u>		
613         1622         308         116         274           614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           621         1630         3105         188         328           622         1631         3107         177         413           622         1631         3107         177         413           623         1632         3109         184         327           624         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627         1636         3119         70         222           628					
614         1623         3085         97         3030           615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           621         1630         3105         188         328           622         1631         3107         177         413           623         1632         3109         184         327           624         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627         1636         3119         70         222           628         1637         3120         163         531           629         1638         3122         60         266           630	L			4 <u></u>	
615         1624         3088         801         634           616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           621         1630         3105         188         328           622         1631         3107         177         413           623         1632         3109         184         327           624         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627         1636         3119         70         222           265         1638         3120         163         531           629         1638         3122         60         266           630         1639         3129         226         501           631				<u> </u>	
616         1625         3089         18         455           617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           621         1630         3105         188         328           622         1631         3107         177         413           623         1632         3109         184         327           624         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627         1636         3119         70         222           630         1639         3120         163         531           629         1638         3122         60         266           630         1639         3129         226         501           631         1640         3146         190         363           632		1			
617         1626         3094         92         1246           618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           6221         1630         3105         188         328           622         1631         3107         177         413           623         1632         3109         184         327           624         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627         1636         3119         70         222           628         1637         3120         163         531           629         1638         3122         60         266           630         1639         3129         226         501           631         1640         3146         190         363           632         1641         3151         212         1588           633					<u> </u>
618         1627         3098         40         342           619         1628         310         142         354           620         1629         3101         48         383           621         1630         3105         188         328           622         1631         3107         177         413           622         1631         3109         184         327           624         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627         1636         3119         70         222           628         1637         3120         163         531           629         1638         3122         60         266           630         1639         3129         226         501           631         1640         3146         190         363           632         1641         3151         212         1588           633         1642         3153         86         517           634					
619         1628         310         142         354           620         1629         3101         48         383           621         1630         3105         188         328           622         1631         3107         177         413           623         1632         3109         184         327           624         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627         1636         3119         70         222           628         1637         3120         163         531           629         1638         3122         60         266           630         1639         3129         226         501           631         1640         3146         190         363           632         1641         3151         212         1588           633         1642         3153         86         517           634         1643         3165         244         453           635					
620         1629         3101         48         383           621         1630         3105         188         328           622         1631         3107         177         413           623         1632         3109         184         327           624         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627         1636         3119         70         222           628         1637         3120         163         531           629         1638         3122         60         266           630         1639         3129         226         501           631         1640         3146         190         363           632         1641         3151         212         1588           633         1642         3153         86         517           634         1643         3165         244         453           635         1644         317         97         342           636		L			
621         1630         3105         188         328           622         1631         3107         177         413           623         1632         3109         184         327           624         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627         1636         3119         70         222           628         1637         3120         163         531           629         1638         3122         60         266           630         1639         3129         226         501           631         1640         3146         190         363           632         1641         3151         212         1588           633         1642         3153         86         517           634         1643         3165         244         453           635         1644         317         97         342           636         1645         3179         106         873           637					
622         1631         3107         177         413           623         1632         3109         184         327           624         1633         3114         70         243           625         1634         3115         295         459           626         1635         3116         115         348           627         1636         3119         70         222           628         1637         3120         163         531           629         1638         3122         60         266           630         1639         3129         226         501           631         1640         3146         190         363           632         1641         3151         212         1588           633         1642         3153         86         517           634         1643         3165         244         453           635         1644         317         97         342           636         1645         3179         106         873           637         1646         3181         108         896           638					
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626         1635         3116         115         348           627         1636         3119         70         222           628         1637         3120         163         531           629         1638         3122         60         266           630         1639         3129         226         501           631         1640         3146         190         363           632         1641         3151         212         1588           633         1642         3153         86         517           634         1643         3165         244         453           635         1644         317         97         342           636         1645         3179         106         873           637         1646         3181         108         896           638         1647         3182         554         775           639         1648         3192         268         441           640         1649         3194         923         1192           641         1650         3195         38         376           642		<u></u>			243
627         1636         3119         70         222           628         1637         3120         163         531           629         1638         3122         60         266           630         1639         3129         226         501           631         1640         3146         190         363           632         1641         3151         212         1588           633         1642         3153         86         517           634         1643         3165         244         453           635         1644         317         97         342           636         1645         3179         106         873           637         1646         3181         108         896           638         1647         3182         554         775           639         1648         3192         268         441           640         1649         3194         923         1192           641         1650         3195         38         376           642         1651         32         185         334           643			3115	295	459
628       1637       3120       163       531         629       1638       3122       60       266         630       1639       3129       226       501         631       1640       3146       190       363         632       1641       3151       212       1588         633       1642       3153       86       517         634       1643       3165       244       453         635       1644       317       97       342         636       1645       3179       106       873         637       1646       3181       108       896         638       1647       3182       554       775         639       1648       3192       268       441         640       1649       3194       923       1192         641       1650       3195       38       376         642       1651       32       185       334         643       1652       3200       199       561         644       1653       3201       516       848         645       1654       3202				J	348
629         1638         3122         60         266           630         1639         3129         226         501           631         1640         3146         190         363           632         1641         3151         212         1588           633         1642         3153         86         517           634         1643         3165         244         453           635         1644         317         97         342           636         1645         3179         106         873           637         1646         3181         108         896           638         1647         3182         554         775           639         1648         3192         268         441           640         1649         3194         923         1192           641         1650         3195         38         376           642         1651         32         185         334           643         1652         3200         199         561           644         1653         3201         516         848           645				J	222
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631       1640       3146       190       363         632       1641       3151       212       1588         633       1642       3153       86       517         634       1643       3165       244       453         635       1644       317       97       342         636       1645       3179       106       873         637       1646       3181       108       896         638       1647       3182       554       775         639       1648       3192       268       441         640       1649       3194       923       1192         641       1650       3195       38       376         642       1651       32       185       334         643       1652       3200       199       561         644       1653       3201       516       848         645       1654       3202       232       681         646       1655       3208       836       633         647       1656       3210       202       384         648       1657       3214 <td></td> <td>L</td> <td>3122</td> <td>60</td> <td>266</td>		L	3122	60	266
632         1641         3151         212         1588           633         1642         3153         86         517           634         1643         3165         244         453           635         1644         317         97         342           636         1645         3179         106         873           637         1646         3181         108         896           638         1647         3182         554         775           639         1648         3192         268         441           640         1649         3194         923         1192           641         1650         3195         38         376           642         1651         32         185         334           643         1652         3200         199         561           644         1653         3201         516         848           645         1654         3202         232         681           646         1655         3208         836         633           647         1656         3210         202         384           648		L	3129	226	501
633         1642         3153         86         517           634         1643         3165         244         453           635         1644         317         97         342           636         1645         3179         106         873           637         1646         3181         108         896           638         1647         3182         554         775           639         1648         3192         268         441           640         1649         3194         923         1192           641         1650         3195         38         376           642         1651         32         185         334           643         1652         3200         199         561           644         1653         3201         516         848           645         1654         3202         232         681           646         1655         3208         836         633           647         1656         3210         202         384           648         1657         3214         349         588		1640	3146	190	363
634         1643         3165         244         453           635         1644         317         97         342           636         1645         3179         106         873           637         1646         3181         108         896           638         1647         3182         554         775           639         1648         3192         268         441           640         1649         3194         923         1192           641         1650         3195         38         376           642         1651         32         185         334           643         1652         3200         199         561           644         1653         3201         516         848           645         1654         3202         232         681           646         1655         3208         836         633           647         1656         3210         202         384           648         1657         3214         349         588	632	1641	3151	212	1588
635         1644         317         97         342           636         1645         3179         106         873           637         1646         3181         108         896           638         1647         3182         554         775           639         1648         3192         268         441           640         1649         3194         923         1192           641         1650         3195         38         376           642         1651         32         185         334           643         1652         3200         199         561           644         1653         3201         516         848           645         1654         3202         232         681           646         1655         3208         836         633           647         1656         3210         202         384           648         1657         3214         349         588	633	1642	3153	86	517
636         1645         3179         106         873           637         1646         3181         108         896           638         1647         3182         554         775           639         1648         3192         268         441           640         1649         3194         923         1192           641         1650         3195         38         376           642         1651         32         185         334           643         1652         3200         199         561           644         1653         3201         516         848           645         1654         3202         232         681           646         1655         3208         836         633           647         1656         3210         202         384           648         1657         3214         349         588		1643	3165	244	453
637         1646         3181         108         896           638         1647         3182         554         775           639         1648         3192         268         441           640         1649         3194         923         1192           641         1650         3195         38         376           642         1651         32         185         334           643         1652         3200         199         561           644         1653         3201         516         848           645         1654         3202         232         681           646         1655         3208         836         633           647         1656         3210         202         384           648         1657         3214         349         588		1644	317	97	342
638       1647       3182       554       775         639       1648       3192       268       441         640       1649       3194       923       1192         641       1650       3195       38       376         642       1651       32       185       334         643       1652       3200       199       561         644       1653       3201       516       848         645       1654       3202       232       681         646       1655       3208       836       633         647       1656       3210       202       384         648       1657       3214       349       588	636	1645	3179	106	873
639       1648       3192       268       441         640       1649       3194       923       1192         641       1650       3195       38       376         642       1651       32       185       334         643       1652       3200       199       561         644       1653       3201       516       848         645       1654       3202       232       681         646       1655       3208       836       633         647       1656       3210       202       384         648       1657       3214       349       588	637	1646	3181	108	896
640     1649     3194     923     1192       641     1650     3195     38     376       642     1651     32     185     334       643     1652     3200     199     561       644     1653     3201     516     848       645     1654     3202     232     681       646     1655     3208     836     633       647     1656     3210     202     384       648     1657     3214     349     588		1647	3182	554	775
641     1650     3195     38     376       642     1651     32     185     334       643     1652     3200     199     561       644     1653     3201     516     848       645     1654     3202     232     681       646     1655     3208     836     633       647     1656     3210     202     384       648     1657     3214     349     588	639	1648	3192	268	441
642     1651     32     185     334       643     1652     3200     199     561       644     1653     3201     516     848       645     1654     3202     232     681       646     1655     3208     836     633       647     1656     3210     202     384       648     1657     3214     349     588	640	1649	3194	923	1192
643     1652     3200     199     561       644     1653     3201     516     848       645     1654     3202     232     681       646     1655     3208     836     633       647     1656     3210     202     384       648     1657     3214     349     588	641	1650	3195	38	376
643     1652     3200     199     561       644     1653     3201     516     848       645     1654     3202     232     681       646     1655     3208     836     633       647     1656     3210     202     384       648     1657     3214     349     588	642	1651	32	185	334
644     1653     3201     516     848       645     1654     3202     232     681       646     1655     3208     836     633       647     1656     3210     202     384       648     1657     3214     349     588	643	1652	3200	199	
645     1654     3202     232     681       646     1655     3208     836     633       647     1656     3210     202     384       648     1657     3214     349     588	644			I	
646     1655     3208     836     633       647     1656     3210     202     384       648     1657     3214     349     588	645		<u> </u>		L
647     1656     3210     202     384       648     1657     3214     349     588	646	L	<u> </u>	L	<u> </u>
648 1657 3214 349 588		l	I	<u> </u>	
					<u> </u>
049	649	1658	3215	859	380
650 1659 3216 51 320			L	<u> </u>	

TABLE 3

SEQ ID NO:         OF AMINO OF AMINO OF AMINO OF AMINO OF AMINO OP/491,404         START NUCLECTIDE OF CODING REGION O	ING
REGION         REGION           651         1660         3220         116         283           652         1661         3222         324         545           653         1662         3227         385         1197           654         1663         323         65         223           655         1664         3240         385         1197           656         1665         3243         65         916           657         1666         3250         263         463           658         1667         3252         244         480           659         1668         3253         136         297           660         1669         3254         83         439           661         1670         3255         573         920           662         1671         3257         548         757           663         1672         3259         34         822           664         1673         326         58         525           665         1674         3263         102         350           666         1675         3270         313 <td></td>	
651         1660         3220         116         283           652         1661         3222         324         545           653         1662         3227         385         1197           654         1663         323         65         223           655         1664         3240         385         1197           656         1665         3243         65         916           657         1666         3250         263         463           658         1667         3252         244         480           659         1668         3253         136         297           660         1669         3254         83         439           661         1670         3255         573         920           662         1671         3257         548         757           663         1672         3259         34         822           664         1673         326         58         525           665         1674         3263         102         350           666         1675         3270         313         152           667	ON
652         1661         3222         324         545           653         1662         3227         385         1197           654         1663         323         65         223           655         1664         3240         385         1197           656         1665         3243         65         916           657         1666         3250         263         463           658         1667         3252         244         480           659         1668         3253         136         297           660         1669         3254         83         439           661         1670         3255         573         920           662         1671         3257         548         757           663         1672         3259         34         822           664         1673         326         58         525           665         1674         3263         102         350           666         1675         3270         313         152           667         1676         3271         117         473           669	
653         1662         3227         385         1197           654         1663         323         65         223           655         1664         3240         385         1197           656         1665         3243         65         916           657         1666         3250         263         463           658         1667         3252         244         480           659         1668         3253         136         297           660         1669         3254         83         439           661         1670         3255         573         920           662         1671         3257         548         757           663         1672         3259         34         822           664         1673         326         58         525           665         1674         3263         102         350           666         1675         3270         313         152           667         1676         3271         117         473           668         1677         3272         44         190           669	
654         1663         323         65         223           655         1664         3240         385         1197           656         1665         3243         65         916           657         1666         3250         263         463           658         1667         3252         244         480           659         1668         3253         136         297           660         1669         3254         83         439           661         1670         3255         573         920           662         1671         3257         548         757           663         1672         3259         34         822           664         1673         326         58         525           665         1674         3263         102         350           666         1675         3270         313         152           667         1676         3271         117         473           668         1677         3272         44         190           669         1678         3273         106         486           670	
655         1664         3240         385         1197           656         1665         3243         65         916           657         1666         3250         263         463           658         1667         3252         244         480           659         1668         3253         136         297           660         1669         3254         83         439           661         1670         3255         573         920           662         1671         3257         548         757           663         1672         3259         34         822           664         1673         326         58         525           665         1674         3263         102         350           666         1675         3270         313         152           667         1676         3271         117         473           668         1677         3272         44         190           669         1678         3273         106         486           670         1679         3274         246         392           671	
656         1665         3243         65         916           657         1666         3250         263         463           658         1667         3252         244         480           659         1668         3253         136         297           660         1669         3254         83         439           661         1670         3255         573         920           662         1671         3257         548         757           663         1672         3259         34         822           664         1673         326         58         525           665         1674         3263         102         350           666         1675         3270         313         152           667         1676         3271         117         473           668         1677         3272         44         190           669         1678         3273         106         486           670         1679         3274         246         392           671         1680         3281         988         1134           672	
657         1666         3250         263         463           658         1667         3252         244         480           659         1668         3253         136         297           660         1669         3254         83         439           661         1670         3255         573         920           662         1671         3257         548         757           663         1672         3259         34         822           664         1673         326         58         525           665         1674         3263         102         350           666         1675         3270         313         152           667         1676         3271         117         473           668         1677         3272         44         190           669         1678         3273         106         486           670         1679         3274         246         392           671         1680         3278         174         1           672         1681         3281         988         1134           673	
658         1667         3252         244         480           659         1668         3253         136         297           660         1669         3254         83         439           661         1670         3255         573         920           662         1671         3257         548         757           663         1672         3259         34         822           664         1673         326         58         525           665         1674         3263         102         350           666         1675         3270         313         152           667         1676         3271         117         473           668         1677         3272         44         190           669         1678         3273         106         486           670         1679         3274         246         392           671         1680         3278         174         1           672         1681         3281         988         1134           673         1682         3282         101         334           674	
659         1668         3253         136         297           660         1669         3254         83         439           661         1670         3255         573         920           662         1671         3257         548         757           663         1672         3259         34         822           664         1673         326         58         525           665         1674         3263         102         350           666         1675         3270         313         152           667         1676         3271         117         473           668         1677         3272         44         190           669         1678         3273         106         486           670         1679         3274         246         392           671         1680         3278         174         1           672         1681         3281         988         1134           673         1682         3282         101         334           674         1683         3291         129         284           675	
660       1669       3254       83       439         661       1670       3255       573       920         662       1671       3257       548       757         663       1672       3259       34       822         664       1673       326       58       525         665       1674       3263       102       350         666       1675       3270       313       152         667       1676       3271       117       473         668       1677       3272       44       190         669       1678       3273       106       486         670       1679       3274       246       392         671       1680       3278       174       1         672       1681       3281       988       1134         673       1682       3282       101       334         674       1683       3291       129       284         675       1684       3294       101       595         676       1685       3296       107       565         677       1686       3298	
661       1670       3255       573       920         662       1671       3257       548       757         663       1672       3259       34       822         664       1673       326       58       525         665       1674       3263       102       350         666       1675       3270       313       152         667       1676       3271       117       473         668       1677       3272       44       190         669       1678       3273       106       486         670       1679       3274       246       392         671       1680       3278       174       1         672       1681       3281       988       1134         673       1682       3282       101       334         674       1683       3291       129       284         675       1684       3294       101       595         676       1685       3296       107       565         677       1686       3298       130       552         678       1687       3299	
662       1671       3257       548       757         663       1672       3259       34       822         664       1673       326       58       525         665       1674       3263       102       350         666       1675       3270       313       152         667       1676       3271       117       473         668       1677       3272       44       190         669       1678       3273       106       486         670       1679       3274       246       392         671       1680       3278       174       1         672       1681       3281       988       1134         673       1682       3282       101       334         674       1683       3291       129       284         675       1684       3294       101       595         676       1685       3296       107       565         677       1686       3298       130       552         678       1687       3299       333       515	
663       1672       3259       34       822         664       1673       326       58       525         665       1674       3263       102       350         666       1675       3270       313       152         667       1676       3271       117       473         668       1677       3272       44       190         669       1678       3273       106       486         670       1679       3274       246       392         671       1680       3278       174       1         672       1681       3281       988       1134         673       1682       3282       101       334         674       1683       3291       129       284         675       1684       3294       101       595         676       1685       3296       107       565         677       1686       3298       130       552         678       1687       3299       333       515	·
664         1673         326         58         525           665         1674         3263         102         350           666         1675         3270         313         152           667         1676         3271         117         473           668         1677         3272         44         190           669         1678         3273         106         486           670         1679         3274         246         392           671         1680         3278         174         1           672         1681         3281         988         1134           673         1682         3282         101         334           674         1683         3291         129         284           675         1684         3294         101         595           676         1685         3296         107         565           677         1686         3298         130         552           678         1687         3299         333         515	
665         1674         3263         102         350           666         1675         3270         313         152           667         1676         3271         117         473           668         1677         3272         44         190           669         1678         3273         106         486           670         1679         3274         246         392           671         1680         3278         174         1           672         1681         3281         988         1134           673         1682         3282         101         334           674         1683         3291         129         284           675         1684         3294         101         595           676         1685         3296         107         565           677         1686         3298         130         552           678         1687         3299         333         515	
665         1674         3263         102         350           666         1675         3270         313         152           667         1676         3271         117         473           668         1677         3272         44         190           669         1678         3273         106         486           670         1679         3274         246         392           671         1680         3278         174         1           672         1681         3281         988         1134           673         1682         3282         101         334           674         1683         3291         129         284           675         1684         3294         101         595           676         1685         3296         107         565           677         1686         3298         130         552           678         1687         3299         333         515	
667         1676         3271         117         473           668         1677         3272         44         190           669         1678         3273         106         486           670         1679         3274         246         392           671         1680         3278         174         1           672         1681         3281         988         1134           673         1682         3282         101         334           674         1683         3291         129         284           675         1684         3294         101         595           676         1685         3296         107         565           677         1686         3298         130         552           678         1687         3299         333         515	
668         1677         3272         44         190           669         1678         3273         106         486           670         1679         3274         246         392           671         1680         3278         174         1           672         1681         3281         988         1134           673         1682         3282         101         334           674         1683         3291         129         284           675         1684         3294         101         595           676         1685         3296         107         565           677         1686         3298         130         552           678         1687         3299         333         515	
669         1678         3273         106         486           670         1679         3274         246         392           671         1680         3278         174         1           672         1681         3281         988         1134           673         1682         3282         101         334           674         1683         3291         129         284           675         1684         3294         101         595           676         1685         3296         107         565           677         1686         3298         130         552           678         1687         3299         333         515	
670         1679         3274         246         392           671         1680         3278         174         1           672         1681         3281         988         1134           673         1682         3282         101         334           674         1683         3291         129         284           675         1684         3294         101         595           676         1685         3296         107         565           677         1686         3298         130         552           678         1687         3299         333         515	
671     1680     3278     174     1       672     1681     3281     988     1134       673     1682     3282     101     334       674     1683     3291     129     284       675     1684     3294     101     595       676     1685     3296     107     565       677     1686     3298     130     552       678     1687     3299     333     515	
672         1681         3281         988         1134           673         1682         3282         101         334           674         1683         3291         129         284           675         1684         3294         101         595           676         1685         3296         107         565           677         1686         3298         130         552           678         1687         3299         333         515	
673     1682     3282     101     334       674     1683     3291     129     284       675     1684     3294     101     595       676     1685     3296     107     565       677     1686     3298     130     552       678     1687     3299     333     515	
674     1683     3291     129     284       675     1684     3294     101     595       676     1685     3296     107     565       677     1686     3298     130     552       678     1687     3299     333     515	
675     1684     3294     101     595       676     1685     3296     107     565       677     1686     3298     130     552       678     1687     3299     333     515	
676     1685     3296     107     565       677     1686     3298     130     552       678     1687     3299     333     515	
677     1686     3298     130     552       678     1687     3299     333     515	
678 1687 3299 333 515	
679 1688 3300 324 121	
680 1689 3303 378 157	
681 1690 3306 296 637	
682 1691 3307 1454 1660	
683 1692 3309 163 471	
684 1693 3311 335 478	
685 1694 3312 5 280	
686 1695 3313 298 546	
687 1696 3314 50 526	
688 1697 3315 99 413	
689 1698 3322 101 685	
690 1699 3323 66 356	
691 1700 3324 76 462	
692 1701 3328 248 904	
693 1702 3335 136 393	
694 1703 3336 47 733	
695 1704 3338 181 786	
696 1705 3339 58 231	
697 1706 3342 226 390	
698 1707 3349 72 488	
699 1708 3356 208 384	
700 1709 3358 194 436	

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
			REGION	REGION
701	1710	3360	263	1459
702	1711	3366	55	816
703	1712	3367	364	735
704	1713	3370	237	878
705	1714	3371	188	721
706	1715	3372	14	241
707	1716	3373	42	290
708	1717	3387	32	202
709	1718	3389	29	256
710	1719	3390	181	393
711	1720	3396	520	822
712	1721	3410	10	153
713	1722	3412	82	291
714	1723	3414	453	292
715	1724	3421	158	337
716	1725	3427	430	618
717	1726	3430	210	380
718	1727	3431	295	432
719	1728	3440	419	556
720	1729		402	256
721	1730	3444 3445		
722		<u> </u>	281 42	430
723	1731	346	<u> </u>	722
724	1732	347	384	689
	1733	3470	114	530
725 726	1734	3478	38	217
727	1735	3479	161	379
728	1736	348	37	231
	1737	3482	156	296
729	1738	35	255	575
730	1739	3503	185	454
731	1740	3505	252	422
732	1741	3529	37	183
733	1742	353	262	522
734	1743	3537	127	273
735	1744	3539	98	268
736	1745	3542	25	312
737	1746	3543	70	228
738	1747	3544	31	177
739	1748	3548	972	385
740	1749	3553	27	164
741	1750	3560	113	358
742	1751	3563	483	764
743	1752	3564	6	434
744	1753	3566	316	507
745	1754	3570	6	377
746	1755	3574	108	440
747	1756	3576	569	348
740	L		<u>.l</u>	1
748	1757	3579	293	442
749 750	L		293 20	442 388 396

TABLE 3

SEO ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
		05, 252, 202	REGION	REGION
751	1760	3587	84	449
752	1761	3596	91	459
753	1762	3599	40	474
754	1763	3606	335	1105
755	1764	3609	169	666
756	1765	3617	141	410
757	1766	3620	218	388
758	1767	3630	189	1
759	1768	3642	122	643
760	1769	3644	431	664
761	1770	3647	274	720
762	1771	3651	245	472
	<u> </u>		<u> </u>	
763	1772 1773	3652	259	642
764 765		3653	153	1994
	1774	3654	87	554
766	1775	3657	57	2744
767	1776	3658	387	920
768	1777	366	402	578
769	1778	3660	120	530
770	1779	3661	480	674
771	1780	3663	1096	938
772	1781	3669	689	1015
773	1782	3677	469	642
774	1783	3678	1194	889
775	1784	3685	406	1134
776	1785	3689	233	706
777	1786	3693	21	446
778	1787	3699	55	414
779	1788	370	59	262
780	1789	3707	38	436
781	1790	3711	229	474
782	1791	3713	314	463
783	1792	3717	178	675
784	1793	3720	258	695
785	1794	3721	96	548
786	1795	3722	32	562
787	1796	3724	220	513
788	1797	3726	180	467
789	1798	3729	251	523
790	1799	373	110	340
791	1800	3735	91	636
792	1801	3736	275	880
793	1802	3738	106	621
794	1803	3762	702	1175
795	1804	3768	293	598
796	1805	377	96	257
797	1806	3772	169	2
798	1807	3786	108	248
799	1808	3787	282	638
800	1809	3789	139	411
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TABLE 3

CEO TO NO				
SEQ ID NO: OF	SEQ ID NO:	SEQ ID NO:	START	STOP
	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
	1010	2.50	REGION	REGION
801	1810	379	248	421
802	1811	38	146	3
803	1812	382	24	275
804	1813	385	138	1
805	1814	388	268	74
806	1815	39	302	3
807	1816	391	24	368
808	1817	395	51	482
809	1818	397	422	766
810	1819	399	102	311
811	1820	4	11219	13123
812	1821	405	253	2
813	1822	406	342	665
814	1823	411	321	542
815	1824	416	736	909
816	1825	422	1541	867
817	1826	43	330	686
818	1827	434	207	34
819	1828	435	140	445
820	1829	437	160	423
821	1830	439	347	706
822	1831	44	91	282
823	1832	450	136	402
824	1833	458	169	348
825	1834	459	99	284
826	1835	462	70	282
827	1836	465	462	791
828	1837	467	76	348
829	1838	470	35	637
830	1839	475	37	426
831	1840	477	242	382
832	1841	478	66	311
833	1842	485	196	426
834	1843	488	117	443
835	1844	490	231	
836	1845	493		485
837			281	610
838	1846	496	90	371
839	1847	5	34	3933
	1040	FAI	1-60	1 3 6 3
	1848	501	60	368
840	1849	502	707	856
841	1849 1850	502 504	707 208	856 459
841 842	1849 1850 1851	502 504 505	707 208 165	856 459 317
841 842 843	1849 1850 1851 1852	502 504 505 509	707 208 165 62	856 459 317 223
841 842 843 844	1849 1850 1851 1852 1853	502 504 505	707 208 165	856 459 317
841 842 843	1849 1850 1851 1852	502 504 505 509	707 208 165 62	856 459 317 223
841 842 843 844	1849 1850 1851 1852 1853	502 504 505 509 511	707 208 165 62 46	856 459 317 223 432
841 842 843 844 845	1849 1850 1851 1852 1853 1854	502 504 505 509 511 515	707 208 165 62 46 13	856 459 317 223 432 582
841 842 843 844 845 846	1849 1850 1851 1852 1853 1854 1855	502 504 505 509 511 515 516	707 208 165 62 46 13	856 459 317 223 432 582 325
841 842 843 844 845 846 847	1849 1850 1851 1852 1853 1854 1855 1856	502 504 505 509 511 515 516 518	707 208 165 62 46 13 92	856 459 317 223 432 582 325 283

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
		"", "", ""	REGION	REGION
851	1860	526	862	725
852	1861	532	207	590
853	1862	536	226	53
854	1863	537	49	198
855	1864	540	270	1
856	1865	541	38	412
857	1866	546	388	2
858	1867	555	199	438
859	1868	556	144	482
860	1869	559	380	165
861	1870	563	27	617
862	1871	566	158	382
863	1872	568	69	320
864	1873	57	6	158
865	1874	571	8	1516
866	1875	572	32	505
867	1876	573	139	456
868	1877	574	49	771
869	1878	576	519	370
870	1879	578	168	1
871	1880	580	159	641
872	1881	581	108	497
873	1882	582	80	403
874	1883	587	172	435
875	1884	589	27	374
876	1885	590	84	428
877	1886	595	68	1138
878	1887	598	1023	766
879	1888	61	65	208
880	1889	612	310	546
881	1890	614	166	918
882	1891	617	252	602
883	1892	62	969	661
884	1893	620	188	418
885	1894	622	877	1014
886	1895	629	202	
887	1896	63	98	277
888	1897	632	221	367
889	1898	64	536	
890	1899		338	381
891	1900	640		3
892		641	12	395
893	1901	642	194	397
894	1902	644	15	395
	1903	646	132	380
895	1904	647	3	389
896	1905	650	135	413
897	1906	651	231	428
898	1907	653	128	442
899	1908	654	214	77
900	1909	656	49	465

TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
OF	OF AMINO	IN USSN	NUCLEOTIDE	NUCLEOTIDE
NUCLEOTIDE	ACID	09/491,404	OF CODING	OF CODING
	ACID	05/451,404	REGION	REGION
901	1910	657	86	397
902	1911	66	267	614
903	1912	662	387	701
904	1913	666	76	498
905	1914	667	517	2184
906	1915	668	1423	788
907	1916	67	107	622
908	1917	678	172	387
909	1918	68	78	341
910	1919	680	832	671
911	1920	683	505	
912	1921	687	105	164
913	1922	690	139	521
914	1922	691	244	294
915	1923	699	194	456
916	1925	701	I	754
917	1926	702	371	520
918	1927	704	1888	2028
919	1928	704	1254	808
920	1928		126	1463
921	1930	706	31	390
922	1930	707	367	2
923	1931	709 715	1152	934
924	1932		744	541
925	1934	716	1360	1220
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TABLE 3

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958	1967	820	964	725
959	1968	825	182	328
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TABLE 3

SEQ ID NO:	SEQ ID NO:	SEQ ID NO:	START	STOP
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1008	2017	995	559	386
1009	2018	997	34	231

## WHAT IS CLAIMED IS:

1. An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of SEQ ID NO: 1-1009, a mature protein coding portion of SEQ ID NO: 1-1009, an active domain of SEQ ID NO: 1-1009, and complementary sequences thereof.

- 2. An isolated polynucleotide encoding a polypeptide with biological activity, wherein said polynucleotide hybridizes to the polynucleotide of claim 1 under stringent hybridization conditions.
- 3. An isolated polynucleotide encoding a polypeptide with biological activity, wherein said polynucleotide has greater than about 90% sequence identity with the polynucleotide of claim 1.
- 4. The polynucleotide of claim 1 wherein said polynucleotide is DNA.
- 5. An isolated polynucleotide of claim 1 wherein said polynucleotide comprises the complementary sequences.
- 6. A vector comprising the polynucleotide of claim 1.
- 7. An expression vector comprising the polynucleotide of claim 1.
- 8. A host cell genetically engineered to comprise the polynucleotide of claim 1.
- 9. A host cell genetically engineered to comprise the polynucleotide of claim 1 operatively associated with a regulatory sequence that modulates expression of the polynucleotide in the host cell.
- 10. An isolated polypeptide, wherein the polypeptide is selected from the group consisting of:
  - (a) a polypeptide encoded by any one of the polynucleotides of claim 1; and

(b) a polypeptide encoded by a polynucleotide hybridizing under stringent conditions with any one of SEQ ID NO:1-1009.

- 11. A composition comprising the polypeptide of claim 10 and a carrier.
- 12. An antibody directed against the polypeptide of claim 10.
- 13. A method for detecting the polynucleotide of claim 1 in a sample, comprising:
- a) contacting the sample with a compound that binds to and forms a complex with the polynucleotide of claim 1 for a period sufficient to form the complex;
   and
- b) detecting the complex, so that if a complex is detected, the polynucleotide of claim 1 is detected.
- 14. A method for detecting the polynucleotide of claim 1 in a sample, comprising:
- a) contacting the sample under stringent hybridization conditions with nucleic acid primers that anneal to the polynucleotide of claim 1 under such conditions;
- b) amplifying a product comprising at least a portion of the polynucleotide of claim 1; and
- c) detecting said product and thereby the polynucleotide of claim 1 in the sample.
- 15. The method of claim 14, wherein the polynucleotide is an RNA molecule and the method further comprises reverse transcribing an annealed RNA molecule into a cDNA polynucleotide.
- 16. A method for detecting the polypeptide of claim 10 in a sample, comprising:
- a) contacting the sample with a compound that binds to and forms a complex with the polypeptide under conditions and for a period sufficient to form the complex; and

b) detecting formation of the complex, so that if a complex formation is detected, the polypeptide of claim 10 is detected.

- 17. A method for identifying a compound that binds to the polypeptide of claim 10, comprising:
- a) contacting the compound with the polypeptide of claim 10 under conditions sufficient to form a polypeptide/compound complex; and
- b) detecting the complex, so that if the polypeptide/compound complex is detected, a compound that binds to the polypeptide of claim 10 is identified.
- 18. A method for identifying a compound that binds to the polypeptide of claim 10, comprising:
- a) contacting the compound with the polypeptide of claim 10, in a cell, under conditions sufficient to form a polypeptide/compound complex, wherein the complex drives expression of a reporter gene sequence in the cell; and
- b) detecting the complex by detecting reporter gene sequence expression, so that if the polypeptide/compound complex is detected, a compound that binds to the polypeptide of claim 10 is identified.
- 19. A method of producing the polypeptide of claim 10, comprising,
- a) culturing a host cell comprising a polynucleotide sequence selected from the group consisting of a polynucleotide sequence of SEQ ID NO: 1-1009, a mature protein coding portion of SEQ ID NO: 1-1009, an active domain of SEQ ID NO: 1-1009, complementary sequences thereof and a polynucleotide sequence hybridizing under stringent conditions to SEQ ID NO: 1-1009, under conditions sufficient to express the polypeptide in said cell; and
  - b) isolating the polypeptide from the cell culture or cells of step (a).
- 20. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 1010-2018, the mature protein portion thereof, or the active domain thereof.

21. The polypeptide of claim 20 wherein the polypeptide is provided on a polypeptide array.

- 22. A collection of polynucleotides, wherein the collection comprises the sequence information of at least one of SEQ ID NO: 1-1009.
- 23. The collection of claim 22, wherein the collection is provided on a nucleic acid array.
- 24. The collection of claim 23, wherein the array detects full-matches to any one of the polynucleotides in the collection.
- 25. The collection of claim 23, wherein the array detects mismatches to any one of the polynucleotides in the collection.
- 26. The collection of claim 22, wherein the collection is provided in a computerreadable format.
- 27. A method of treatment comprising administering to a mammalian subject in need thereof a therapeutic amount of a composition comprising a polypeptide of claim 10 or 20 and a pharmaceutically acceptable carrier.
- 28. A method of treatment comprising administering to a mammalian subject in need thereof a therapeutic amount of a composition comprising an antibody that specifically binds to a polypeptide of claim 10 or 20 and a pharmaceutically acceptable carrier.

## SEQUENCE LISTING

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ccacgtgggc ctttaccetc cacctetect gaetetgtge caggtetetg ctettetett
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<213> Homo sapiens

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<210> 14 <211> 1694 <212> DNA

<213> Homo sapiens

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aaaaaaaaa aagg
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<210> 15
<211> 739
<212> DNA
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<213> Homo sapiens

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cgagatcagc ctggccaaca tggtgaaact ctgtctctac aaaaaatacaa aaaaaattac
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ccqcqcatqa tqqcqqqtqc cagtaatccc agctactcgg gaggctgagg tgggagaatc
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                                                                      660
gtgagacaqa gcgagactct gtctgaatcg atatacatac aagatgagtt ctaaaaaaccc
                                                                      720
                                                                      739
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     <213> Homo sapiens
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     <221> misc feature
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ggctctgaga aagngttata ctctgttctt ttgttgcaga ttggactact agagtgaagc
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                                                                      600
ttagggtaaa aaaaaaacca aattttccat tttttgaaaa aaggttggtt aagaacctgg
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gccccccaag cccacttttt ttttttaagg gggatttttt caactccctt atgggcttaa
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gaccaccetg cacgagggca cagccetege tgcccagege catetaggae cetectggee
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gggactccag tgggttttca agtggggaga aaaaagcccc tcatccagaa aaaggggatc
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<400> 18

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aattcaacac ttcacgtcag ccaggaaagc tacaggttag taactaaact aacctagtct
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cactttggga ggctgaggcg ggtggatcac acctgaggtc aggagtttga gaccagtttg
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gccaatatgg ttaccatact gattatcatt ttaacattta tatacaaaca tctttaagtc
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120

etggtggtgg ggtegeggee egagetgggg egttgggage egegeggtge egteegeetg

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1313

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PCT/US01/02687 WO 01/54477

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<210> 67 <211> 2549 <212> DNA <213> Homo sapiens

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aaagatcacg aaggccatgt aaaattaatt cagatttaat tttcttcagg gctgtaatca
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attacagtaa gatattttga attaagaaac aaggtgtaaa ctgtaggaaa atatacaaat
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aaacacaact gaaataaaaa aaaaaaaaa
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<210> 68
<211> 533
<212> DNA
<213> Homo sapiens
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     <213> Homo sapiens
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gcccaggcgg gggggctaag gcctgaaacc ccagcacttg ggaagcccaa ggcagggga
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gctggggcag aaaaaccgtt ggaccccggg aaggggggt gtcacggacc ccaaaccggc
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cettggacte aageegggg agaegaaegg gaceeeteee aaaaaaaaa aaggggggge
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ccttaagggg aaccattgta ccgcggcggc ggggggatga gccttttaag ggcaccaaac
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cccgggcggc
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actcatcagt tgcaaagatt gcctataaaa ggaccttagg atttaaggaa ggggcttctt
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ataanaaaaa caataaacaa aaacaaaaag gggggggccg ttttaaagaa ccaatttat
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ctccgcgcgg gtggggaaaa ataatttttt tattggggcc caaaaataaa ttcccgggcc
                                                                      720
cgggtttaac acggggggg ggggggaccg ncccgnccgc cgnnggggct tcccccccgt
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cggccccggc gggtagccg
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<210> 71
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     <213> Homo sapiens
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caggtgctga tccttttaga ggcagccgtg gaagaggaaa agagatcaga agagaaaagg
                                                                      180
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                                                                      120
aacatcatca gcccaagcaa caatggtggc aatgttcagg agacagtgac aattgataat
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gaaaaaaata ccgccatcat taacatccat gcaggatcat gctcttctac cacaattttt
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                                                                      420
tetetgatea aagaegtgga ttggtteetg ettgggteae ceattgagaa actetgeaaa
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    <222> (1) ... (1928)
    <223> n = a,t,c or g
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gaatgactca taaatcaatg caggagcagt tagcagacca cggctgtatg gctcagtgtt
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tttaagagtg aaagagaaaa ttctatttta actaaaacta aggcttaatt tttaaatcca
                                                                      240
cagaggtacc aaggcgccct ctaatggtga actcaaacaa tqctctattt tqtaatqaqc
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tacagtttca gttagaaatt gtggtaaatt cgttagggaa ttatgaacag atttttttct
                                                                      360
ttttttgtaa aggetttata atttettaat ggttggeeat eagttttgte tettetatge
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attttcaggc tgtattctac aaggettett geetattggt gaagggttat tgggggtttg
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ggttccacat cgtaaaggcc agcatcatgt gggacacaag agtggctgct actgcgcaaa
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acctegetgg agtecetece ettattggag gtgetgtget ttgttttate cegtggatee
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cagatctacc taaacctcaa gtctatgtta aagttgcttt cctgctgtta aataagctat
                                                                    1140
gatattaaga tattctgact tgctccagtg tcaagggacc ttctgggagc aggtgctaac
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qccatqaccc atactcattt acaaaaacaa gaacactttc ctctatccct aaaattatgc
                                                                    1860
tttagtactt gaggccttta aaagttagtg cttttgattg tgaagacatt cagcaactta
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                                                                    1949
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aagcttttaa tcagagctca gtccttattt tacatcagag gattcatact ggagagaaac
                                                                      240
cctatccctg tgatcaatgt agcaaaacct tcagtaggct ttcagatctt attaatcatc
                                                                      300
aacgaattca cactggagag aagccttacc catgtaatca gtgcaataaa atgtttagtc
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gaagatgaga tettgttaaa catcacagaa tteatacagg tgagaaacce tatgaatgtg
                                                                      420
atquatqtqq qaaaaccttt aqtcaqaqct ccaaccttat tcttcatcaq aqaatccaca
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cagateteag aceteattaa acaeeagaga atecacaetg gggaaaaaee atataaatge
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ctcattaacc atcaaaaat acacactggt gaaaagccgt ataagtgtga tgcatgtggg
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ccctaccagt gtgttcagtg cagcagaagt tgtagccaac tctctgaact tactattcat
                                                                    1140
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                                                                    1200
tqtacaccaa ctctattcaq taccaqaqac actqtaccaq aaaaaaatct aatqaatqct
                                                                    1260
qttqattatt qatqaqtatq aaaaaqqttt taatcaqtqt tcaactctta tqctacatta
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ggcagatgtg gaagcatcat ttgagcccag gagtttgagg ctgcagtgag ctatgattcc
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accattgcac tccagtctgg gcaacagagc aagaccctgt ctatttaaaa aaaaaa
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     <211> 529
     <212> DNA
     <213> Homo sapiens
     <400> 101
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tcattcagca gtcagatctt cctcaaaact ggaagttttg atggatagtc acaaggaggt

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gccaacgttc aggatctcta gagcaaaaag cctgcacaaa agaactgcag actgcatcta
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gcagtgataa aagagaacat gtcataccca agctgatctt atcccaggaa tccaaggttg
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gttaaatagc aacactcaga gatcaggagt aaaacatcac gtgcagctca gtactgaact
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gaagaaggaa ccagcacct acttctcccc gataggacag cattttcacc aaggcaggac
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ggcctgcatc acgaggctgt ggcctccctc cccagacccc ttacctctqc cccqqqcctc
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eccetcagtg aggatetttg tgtacttget atteegtttg cacaeccage gtggeeteet
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tgeaggeagg aggeagtggg geceetgeee acteagette teteatttte tteaettate
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agtettgtee tgttecacte aaatetacae tgagggeagt tggeetggat gggetteaet
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aggggccccg tetgtgcact gggcccgttt cccctgctgg ctgcaagcca tqqqttcttt
                                                                    360
ttetectete tgecceteat getgaeette tagatgecae teccaaatee cetteactee
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atacccacca ggcttcatgc ccacccaggc ctctggcacc ctcaqtgcag cccatgattg
                                                                    480
ggaactcacc atcagcagtc agtggctcgg tttaagagag ggccgcagag ggaactgggt
                                                                    540
cctgatgtgg acttggatgc cctgggggga tagntctgct gacactgtgg cctgaaatan
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aaaaagtgct gagcaagcag tgtatgctgg agcctcagta gaccatctgc acaatgggga
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cgtggagagg atggttggat tatgcctctg catgtca
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     <212> DNA
     <213> Homo sapiens
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attotacett titggagtti atettgaace aagaaaaatt atgggaggaa ataacagete
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                                                                    300
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                                                                   360
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                                                                   420
acgtccagtc caacagagga atcacacatt acatgcttcc cagagggtac atcctggggc
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cgttagcaaa cgttgatcca agaggagaaa cattcagtaa gtgctgttat cacagaacca
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                                                                   711
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                                                                     180
ggtacatagt cacctaagag ctctgttgaa gatgtacaag aaaatgttct tttcatacct
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gctaacaaca tccatcctgc agtctgtgga tccaggagtc aatttgacat agaagtctga
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tttaagaaac acctttcgaa aggctatggc tgctatacag aggatgattc ctctgatgga
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aacctttgg
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                                                                      120
aaataatgac agttetttet ttecaatatg aataettaat tttteteett aetteaetea
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ctacaatcta taatacgaca ttgagtagaa gtggtgatgg aagacgtact tgccttgttt
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cccgggggc gttttacccc gcgaatggga aaacggtgct tctcctatca ctcactgcta
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catecettea etecetetat acceecegt teaccacaac ecceatatea egggeacect
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caqccqcq
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     <211> 738
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     <213> Homo sapiens
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     <221> misc feature
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     <223> n = a,t,c or g
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ggctctgtcc agccctgtga ttcctggaag gccctcctcc gggaagagac cggtaatgaa
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aaagttaagc atattacgtt cattatttca cttaatcctc acaaaagccc ccttggggaa
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ggtacttcca ccacatcaaa gtcactgccc aaggtccctg ctgagtgatc aggaagctcg
                                                                     420
getecaaaat aaccatgage tgtggaaage tgcactcaac cagagaccaa atcagaacte
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cagaagtcag agtccagcgg gtgttgcctg cgctccaaat gcctgatgcc caccccatcc
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cgagcaggtc cgtcagcttg gctgggctgt cccaccctcc aggccacact ggccaatccc
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cetteettee teggggtggg etgggtegge geaggteece tagtteacce agggetgeaa
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aaaatgtgtt ttgacagccc ggagggctga cgtgcggacg cgtgggtcgt cccggcanta
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     <211> 1706
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<400> 107

<213> Homo sapiens

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                                                                      120
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                                                                      180
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cgtttcaaga tagatttggg aattttccgg cgggctgcca tggtgttcta cacagactgt
                                                                      420
atccagcagt gtagccgacc tctatatatg gatagaatgg tgttgctggt tgtggggaat
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                                                                      600
aageteegea getetgaaaa ggteeteeca gteeegetet tetgeategt ggeeaceget
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gtgatgtggg ctgccgccct atatttttc ttccagaatc tcagcagctg ggagggaact
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ccggccgaat cccgggagaa gaaccgcgag tgcattctgc tggatttctt cgatgaccat
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<213> Homo sapiens

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<212> DNA

<213> Homo sapiens

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300

360

420

428

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caacactgag ccatttgctg catttctttt tatactaaat atgtgactga caataaaaac
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aattttgact ttaaaaaaag aaaaaagagg gcggccgtt
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tagctcaaaa tttacaagaa ataaaaatgt gtacagtaaa aattaatctc ctttccaccc
                                                                    180
catgacccct agccactcag atctccccag aagcaaccgc ttataaatat acattgtctt
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aatttcctat aaagggaaat gctgtgtaaa aagaaaatgt gttgctaatc tgtaatttaa
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aagagtetet etttttgaat tteteaagea ttatgaaaag ataeggaeta gtatgatgaa
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ctgctgaata ccctatttag cttcaagatt ttcccattca tggctggggg atttaaaaaa
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atgetttaat taaatgeeag tatacetatg tgtgeageag taaaaaatta gtgagaaaaa

720

780

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gccagaactt aacagaagtt gggaatgaac cggctggggg gaagaagcta ccccaatccg
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gggggagtag tatcatccta atattatggc ctttatccat gaacatcgga tgttactcca
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tttatttgaa gatggttatg cttttgtctt caaaattcag ttggaagagt ttttctaaat
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ggctctttga taactgcatt ttgattagtt ggcagaatca gtctacagtt ccttcaactc
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tggggataca aagattttat tttaaagttt agatacacag gtgtaatttg taaaagacag
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gggttettat ccctgatgca catggcccct gctgctgtgt cattccccta ttggctaggg
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ttaqaccaca caggccaaac taactccaac cttnnggggg nctaatttaa agagagtgac
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                                                                      420
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                                                                      540
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cactttggga ggccaaggcg ggtggatcgc ctgagggnca gagttcaaga ccagcctggg
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1560

1620

1667

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acctgggcgt gagcagcgca cacacagact ggctgccacc cccaacagca ccagcagcgc
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tgatgcgtgg cctggtgaat ggaggcgtgg ccctctcgag tgggtttcca agaactgttg
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gtgaaattcc atctctgaga gtccagggtt cctcaccacg gccgccccat cctgagcccg
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     <211> 1667
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     <213> Homo sapiens
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gttcaccage tttcgggcta getgggtagg aggtgatget gecccggtet ggcacccact
                                                                      240
teccegggee tetectaace cataggacag tagtgeteet ggettgtget geccagagge
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tacctggett tecetaatte accgaececa ggattaacee catggtggtt ggtateaggg
                                                                      360
gatgaggeca gagecetttg agetgtgeee eteacagggg tagggteatg geeteageca
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cgtagcggaa tcgggggtat gctgttcgaa ttcataagaa cagggaggtt agaagtaggg
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ggaagattgt agtggtgagg gtgtttatta taataatgtt tgtgtattcg gctatgaaga
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                                                                    360
cttcggcaag gtcgaagggg gttcggttgg tctctgctag tgtggagata aatcatatta
                                                                    420
480
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    <211> 849
    <212> DNA
    <213> Homo sapiens
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    <221> misc feature
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    <400> 153
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cccgccggcg cggacgcgag ctctgtcgca ccgatagaac cgacgcatgg cgccgataca
                                                                   780
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                                                                   840
cgacggacg
                                                                   849
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<210> 154
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    <212> DNA
     <213> Homo sapiens
    <220>
    <221> misc feature
     <222> (1) ... (860)
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                                                                       420
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ceggatecat gggeecagea eccaggggea teagettetg ettttatggg tgggggtett
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cetttegaag acttggcage cgagcaccca cgggattgca tcageteegt gatggetaag
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aagttcagct aaggagatgt gaggagcagt aaagaaggcc cttgttctgg aggaacttgt
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getteteege agagtegtgt getgeeatge caggtaetea tecacaeggg caegggeetg
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caggtccagg tacagctcca ggcccatagt ggggaccgac cgacaaattc cncgncnctg
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gaaagaagta caggacagta cactgaaaat tataaaacat tgtcaaagga aattaagacc
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taaataaatg gagatatgtc ccatgtttgc aaataggaaa atacagtatc atcaaggtgt
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```

420

480

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<213> Homo sapiens

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		gatctgcctg				
		gccggccttc				1980
		atgattgcgg				2040
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<211> 5273

<212> DNA

<213> Homo sapiens

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<213> Homo sapiens

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1140

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720

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<212> DNA
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<213> Homo sapiens

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<212> DNA

<213> Homo sapiens

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<210> 216 <211> 796 <212> DNA

<213> Homo sapiens

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accaccccaa gggatcctcc ctatcacctt tccccctgct cttcctccta ctttgtaaaa
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gagggetttt etgtggttta geacttgaat ttetgeagta egttgattet gaegeteata
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                                                                      300
aatcacctca aatacaacgt aatgttgggt ctaataagga aactccactc tgctccactt
                                                                      360
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taatgtcaga aagatggtga taatgaagca aaagaaaggc agattatgct gqccqqqcqt
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ggtggctcac gcctgtaatc ccagcaattt gagaggctga gatcacttaa ggtcaggagg
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gggtgacaga gcaagactcc atctca
                                                                     926
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     <223> n = a,t,c or g
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cgattgggtg gttggagcca ggactgctgg ggaggaggcg gctgcagcca gcagctgaca
                                                                      180
taacattaat ageteeteae caetgtgeat geteatatgt ceagtaettt geatatatga
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caaggccaaa tacatacgtc acagaaccca ataaggtcct acagcaaatt cgacaggcct
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                                                                      420
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<400> 222

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<210> 226 <211> 974 <212> DNA <213> Homo sapiens

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aatttcatat tcatccttca aggcctggtt caagtatccc ttcctctgta agatttttcc
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gcaaggagtg catcatcgcc tcatttagtg tggaaaacca gtagacatat ggagtgggtg
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                                                                 540
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ctgtaatccc agctacccag gaaggctgag geggcagaat cacttgaacc eggaggegga
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720
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gatgaagett ggeteetagt gattggtgge etattatgat aaataggaca aateatttat
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gtgtgagttt ctttgtaata aaatqtatca atatgttata gatgaggtag aaagttatat
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gccccttggc ccctccaggg gccatgggat ctctgtctcc cacacccctg tcacggcccg
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cgaggtgcac gcgaggctct ccacagccca ggaaggcagc ctgtcaccct gctctccgag
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<212> DNA

<213> Homo sapiens

<400> 239

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<210> 242 <211> 1398

<212> DNA

<213> Homo sapiens

## <400> 242

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<210> 243

<211> 1146

<212> DNA

## <213> Homo sapiens

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<213> Homo sapiens

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<210> 245 <211> 1970 <212> DNA

<213> Homo sapiens

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                                                                    1920
ttaatgatgc ttggtttcca aatagtcaaa acttgattat gtttatgtag aagtatcccc
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<211> 5201
<212> DNA
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<213> Homo sapiens

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		aagtctgcaa				1020
tgaacccatc	aaagagtgcg	ggaccaacga	atgcttggac	aacaacggcg	gctgttccca	1080
		teggetaega				1140
		atatcgatga				1200
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<210> 249 <211> 3196 <212> DNA <213> Homo sapiens

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<213> Homo sapiens

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qqaaaaaaaa gtqttattaa cacacaggg qagttttttc cnctcttttn ctctgtggca
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<210> 271
<211> 601
<212> DNA
```

<213> Homo sapiens

```
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gccgcgccgc accgagaagc tgctgtgtgt gatgcttttg cttctggaga ggatggcact
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gtgaatatgt etttttata tgggtatagt attcaaagtt tetgtggtga attacagett
                                                                      360
taaaaaaact ttttttttca gtgagttgta aatgtagctg attgtgggag gaggtggaat
                                                                      420
taatateett eeeettaaaa catatttta taettttaa cattgtaaga aetatetgat
                                                                      480
gatagaacte teacaggeaa ataactatea teatgtattt ttgeaagtaa tacatttage
                                                                      540
aaagcatcat tatttggtca aatatttgta tttttaccat gcttccttca tattttaaaa
                                                                      600
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<210> 272
<211> 5944
<212> DNA
<213> Homo sapiens
<220>
<221> misc_feature
<222> (1)...(5944)
<223> n = a,t,c or g
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gctgaagcgc ctggagaact gcacggtgat cgagggctac ctccacatcc tgctcatctc
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getgetgtte egagtggetg geetegagag eeteggagae etetteecea aceteaeggt -
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                                                                      420
caaggatatt gggctttaca acctgaggaa cattactcgg gggggccatc aggattgaga
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aaaatgetga eetetgttae eteteeaetg tggaetggte eetgateetg gatgeggtgt
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ccaataacta cattgtgggg aataagcccc caaaggaatg tggggacctg tgtccaggga
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ccatggagga gaagccgatg tgtgagaaga ccaccatcaa caatgagtac aactaccgct
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gctggaccac aaaccgctgc cagaaaatgt gcccaagcac gtgtgggaag cgggcgtgca
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                                                                     1980
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ttct
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<210> 273
<211> 923
<212> DNA
<213> Homo sapiens
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<400> 273

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```
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gcatatgtaa tagacgacac tcacgttagg actccagggc ctgcatacag cggtcgagag
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                                                                      923
```

<210> 274
<211> 4784
<212> DNA
<213> Homo sapiens
<220>
<221> misc\_feature
<222> (1)...(4784)
<223> n = a,t,c or g

<400> 274

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1980

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gaagttcact cttgattgca cccaccccat agaagacgga tcatggatgc tgccaatttt
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gagcagtttt tgcaagagag gatcaaagtg agcagaaaag ctaggaatgt cattggaggg
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1600
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<213> Homo sapiens

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	tcttcccaaa					840
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	gtcttgtggt					1200
tggcccagga	gtttggccag	aagtcaaggc	ttagaccctc	atgctgccaa	tatcctaata	1260
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<210> 278 <211> 1479 <212> DNA

<213> Homo sapiens

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                                                                      240
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ttttggagac catggataat aagaaaggtc gaagatatga ggcggtgaag tggatggtgg
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	gtcattgtgc					2940
	ggccggtttg					3000
	gacccaagtg					3060
	tcaacagcag					3120
	gaagtacaca					3180
	gatcccattc					3240
	ttttatttct					3300
	cccatggagg					3360
	accacactgc					3420
	ctcgtatcca					3480
	aaggactgta					3540
	ctgcattctt			_	_	3600
	tgccgaattc	<del>-</del>	_			3620
	_					

<sup>&</sup>lt;210> 295

<sup>&</sup>lt;211> 627

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Homo sapiens

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                                                                      120
tttacattga attccatgat atagcatatt tttaaaaaata tgaaaatgat gttcataata
                                                                      180
accaactggt tgaattatta ttttttgetg ttctcaccct ccaaccctca aatacaatcg
                                                                      240
atcctccatg aagtggcgcc actgtggttc agaacacttt acactttgct tagagggtgc
                                                                      300
tccacctgga agggcctgag ctcctaaaca atcggtaatg cagtgataaa gcgttaactt
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ccaactatca aaaagtacct gactcattca ttccaactgg agctcatccc cgtgagctct
                                                                      420
gggtcaqaqa qatgagetee ceagecetge cacagegtea tqccaqqaac caaactaaca
                                                                      480
egagecteag getgetgate ttaaagtggg gatageetta gggteatete ggeetetggt
                                                                      540
gagecateat ggeageetet eggeagggte tgagtggeag gagageeteg gagageetta
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gaactgcctc tgttcttact tggaaac
                                                                      627
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     <211> 888
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     <213> Homo sapiens
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cagtatttac tgcctctaga taatagttta ttaaatactc tcccagacta tataactgag
                                                                      120
aaaatacact aacaaattcc cctccccctt ttctaaatta aaaacatagt atatatgaat
                                                                      180
atcattttca tatatcttgc tacttcctta gccttcttaa ttataaactt gagtcagcta
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ttatttactg agtacttaca ttttagatgc tgttctaagt gctccacatg tataaacttg
                                                                      300
cttagtcatc acgagtggga actattaccc tcatcgtaca gaagaggaag cagaagccca
                                                                      360
taaagtttaa atactttctc caagttcaca tggctagtag gtgggggagt gacgatttaa
                                                                      420
accectgete ttaatetetg tacttttetg tetgatgtaa atttettatt geeetttttt
                                                                      480
taatatcact gaacttgagg atattgttta tctttagcaa tggaaaaatc atttcctcct
                                                                      540
gatattcttt atccagtttg tctaaagtct aaaaaacaaa acaactcttt ggtttattac
tgggtgaacc ccaaaattgg gattcggcca gagaggccac atgggttctc ggcttcctcc
                                                                      660
aggaaagaat tcaagaacaa gctgacagta aagtgaaatc atgtttatta agaaagttaa
                                                                      720
ggaataggcc cagcacggcc gactcacacc tgtaatccca gcactttggg aggccgaggc
                                                                      780
gggcagatca ctgggtgagg agatcgagac catcctggcc ggcatggtta aaccccattt
                                                                      840
taataaaaaa gccaaacatg gccggcgggg gggcggccct cggggccc
                                                                      888
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tgaggcacat gctccgacaa caccttgctc atggggccct gcccgtggcc acagtagaca
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ggccagactt ttaccctcca gcttatgaag agagccttga ggtggaaaag cagagctgtc
                                                                      420
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                                                                      480
ttccaggatg gaaatgactc ccacccagag gccccaccat cttatagaga gtccatagcc
                                                                      540
eggetggggg tgacageeat etcagaggae geceagagge gaggeeaaga gtgetgagge
                                                                      600
agagaaaact tttccagcac tcatgatgcc accactgtgg ggagcagcta ctgttattaa
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aggccaacga gggac
                                                                      675
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     <211> 379
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                                                                      120
acggaaaatt tgctacaatc actaatgagg gatccatgtc cagtgggagt ccagcttcga
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actacaaatg atggccataa aacctactat actcgtgaca cagggtttaa tactttgttg
                                                                      240
gaaatgtcat aaaatgatat gctcttactt caacttacaa ctggaacgac actttctgga
                                                                      300
aacaattcaa teegattett teatggagaa aettacattg acagatttga egatttacag
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aattcatgtt gcgacccat
                                                                      379
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cattgaacct tagctccatg ccttgcagtg gttcttctgt tcagactttc agaccattac
                                                                      180
tgatttttca taatgtgacc ttcttcattt tacctgttaa gtgttttaat gctctgatta
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gtttctggtc tattaaacaa ctgaacagat agagatgctg tttgttgaga tgaggagtag
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gtccttctga ataaaacata gttgtttata agtcttggtg tacctgactc actcatttta
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gtgcatcgag gtaggtagat tggagggtga ctgaggggag ggcactgtca gttgtgaggt
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tgtcttctaa cagagtatgt acaggaaggt aatagttgct ttaacagtgt tcagacttca
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agtggagagt cttgatagag	aatactgctg	catcagatgt	ctttttacat	gtgtatttgg	420
ttatgtggtt atgagattag					480
gccatacaaa ataccataga	ctgggtagct	taaacagcag	aaatgtattt	ctcacagttc	540
tagaggctgg aaattcaaga	tgagaatctg	gcatcgttgg	cttctagtga	ggattctctt	600
cccagctcct ggtttgcaga	ctgccacctt	ctcagtgtgt	tttcatgtag	cagagagtga	660
gctctggcat ctcttgtgct	tcttttttt	tttggccctt	ttgcccccca	ggtggaaggc	720
cagggggcca atttgggttc	atggaaccct	tggcttccgg	gttggaagga	attttctggc	780
ttaaccttcc caagaactgg	aaataatágg	gggggccccc	ctgcccggcc	tgattttgga	840
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<210> 301 <211> 2283 <212> DNA <213> Homo sapiens

<400> 301

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     <211> 413
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc feature
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     <223> n = a,t,c or g
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                                                                      120
ctgatctatg gctactacgc atgggtaggc ttctggcctg agagtatccc ttatcaaaac
                                                                      180
ettggteece tgggeecett aacteagtae ttgatggace accateacae eettetgtge
                                                                      240
aatgggtatt ggcttgcctg gctgattcat gtgggagagt ccttgcatgc catattattg
                                                                      300
ggcgagcgta aaggcatcac aagtggccgg tctcaactac tgtggttact acagactttg
                                                                      360
ttctttggga taacgactct caccatcttt gatgcttaca aacggaagcg ccn
                                                                      413
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                                                                      120
tgctgacttc cctttcctgg acttgagctg atgaagggga aatggtgttg cagtctcctc
                                                                      180
tgtcagagcc ctcaggtgca gacggcactt gtctgccccc tcagcctcag ccttggccca
                                                                      240
cetggteece agtgeeetet cetetggetg gggeaggagg acetgeegga catageeaga
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tgtattacgg atgactgcag tcagctcccc caggctcctg cttctcttqc ctcctqcttt
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gggttaggag ttggaatcag gctgttaccg acaaaagggg tcaaggtgac tcattttcct
                                                                      480
tatcacgett aggagttcaa gegaettget gatetteeta attettacaa aacetgeeat
                                                                      540
gaacccagct ccctttgtat gactgaccct gccagcctgg gagacataga gtctgattgc
                                                                      600
ccggtctggg ggttataacc ccccggggtt tggacctgga aatccaaagc accctttggg
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ctggtggctc ttcatgctgg ctacatcttt atccagacgg agaagaccat ctacacccct
                                                                      180
gattcactac cgggtgttca ctgtgaacca caagatggac cctgtgacca ggacattcac
                                                                      240
tetggacate aaggtggtet tteeegatga ggggtggggg gtggtggtgg atcetggaca
                                                                      300
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ctggggttac atggtgtgct gaagtcctgg gggcatgagc caccaggggcc ctcccagagg
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agagtct
                                                                    427
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     <211> 609
     <212> DNA
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                                                                    120
cacagtggtc agcagcagac ctgttgcctg tctggagtcc gttcctggga tgtgtatgtc
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ggtctgcatg cccttgaatt accgtggaag taacttctct gagacagatg tctggatgga
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tetttecaga geteatettt gaateettgt tattataaaa taagaattaa attgttgaae
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360
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acaatgatg
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                                                                   120
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                                                                   240
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                                                                   300
tgtcactttg gtgccaggac tgagtggcct tctcaggaac cagagccttt tgccgaaaaa
                                                                   360
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                                                                   420
gacagtgggc atgagacccc aaacctctgg ctgagaatat tgccctcact taaagaagga
                                                                   480
gctggaaccc gagtgcagtg cctcacgcct gtaatcccag cactttggga ggctgaggtg
                                                                   540
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                                                                   600
tctactaa
                                                                   608
    <210> 307
    <211> 781
    <212> DNA
   <213> Homo sapiens
    <220>
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      <222> (1)...(781)
      <223> n = a,t,c or g
      <400> 307
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 ctctcgtgga gactagttcc gctgttttgg tgcctgcaga gcctcactgg ctttctaggg
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                                                                       240
, actogaccag gaagecagge acagggette actgettgea atgetgeaaa cacacetgge
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 cgggaggctg aggcaaaaag gtttgcttgg acccaggagg caaagttggc gtcagcccag
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 aacatggcac tgtactccag cctgggcaac anagtgagac ccttttttc caaaaaaaa
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                                                                       120
 acagaaagga atgtactttg caagaaatgg tagttcatcc taagtttcca aatacttttq
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                                                                       300
 taaacaataa ccactttcaa aaacacatgg aaccaagatc atacatggtt ttacaatttt
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 aaaaaatcag attgtacaca ataggttaga atagacaagt tagaattgtc atgattttaa
                                                                       420
 caatcttaaa tctacaattt caactgtact cctttcaata tagaaataac ctgctttata
                                                                       480
 ccaaattcta ctttctgctt gcaactaaaa cactgtacaa tgagatggat acaattagtc
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 aaaccttaaa attaaaaaag ctgtagacaa cagaaggtaa actggaaatc catttacaat
                                                                       600
 tcaaaaaact cactaataac aaaattaatg ttcatcaact tcatttataa tcacatttqq
                                                                       660
 cctacaatgc ctaactaaaa tgacacatgt acacaatata caccccagt gtactaactg
                                                                       720
 gtctcttaca aaaaatctga acaaagcatc ataagcagga cactgggaag aacatgtttc
                                                                       780
 aatgtagaca tettttaaaa atgeattaat aettaeatat caaaattaet agataaaage
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                                                                      1140
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1391

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360

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4320

402

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aattgetttg ettggeatte ttttttttg tgatgagggt ggtggtgtgg tgeagggtet
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gggagtgctg cetteteett gtactetttg teteteete ageaagttgt caggeattte
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cetggtgete ageettatge ttgaagtggg aagggtatte ceacceteag gagggacaeg
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cttcacac
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     <213> Homo sapiens
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tggccgcctg ccctctctcg tgctggtggt gctgctggtg gtgatcgtcg tcctcgcctt
                                                                    180
caactactgg agcatctcct cccgccacgt gctgcttgag gaggaggtgg ccgagctgca
                                                                    240
gggccgtgtc cagcgcgccg aagtggccct ctggcgggtg qqaqqqcqca attqcqacct
                                                                    300
cttgctggtg gtcgggacgc gcagtagacg gatcgaggag aggggagccg actacagccg
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```

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     <211> 635
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     <213> Homo sapiens
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                                                                      120
geagetgett tggettgaaa tggeaageee egggaeetet eeceaeeeag tgetttgatg
                                                                      180
agggccaggc cagcatgtac tgccaccttc ccgtcctttc acctagccct ggacagtagc
                                                                      240
taccttcctt gctgtaaagg aaaggccacg tttataccaa aatccagaat ctatctgcag
                                                                      300
gaggcaaagg gaagtgggga gcccctggga tgaggatctg tgagggtggc tttccctgct
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aagcagaaca tetgaetgte teacteetgg etgtgteeag gaggtagatg ggettgaaat
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caattctgct tgctgcatat ctgatttcct agagcccact cgtcaagtga ggagacatcg
                                                                      480
tcagtgctgc agccggggat cgccatggag accataggac tggctgactc cgggcagggc
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teetteaceg gecaggggat egecaggetg tegegeetea tettettget gegeaggtgg
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     <211> 1311
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ceggaaaggg ggcgctegtg ceegcageet gagacteetg getgagttee gtegggatge
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ccggtcggtg aagctccgac caggggagca ctttgtggag gatgtcactg acacactcaa
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acgettettt egtgageteg atgaceetgt gacetetgea eggttgetge etegetggag
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ggaggetget ggtatteeta agateeetga gageeaagge ecaaceagga tetetgeett
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ccccaccag aatccatggt ttggcagccc tccgccccat cacttcccac cctgggggat
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aagatgtgat tggctgcctg ccgcgggtca cccgccgcac actggccacc ctcattgggc
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atctctatcg ggtgcagaaa tgtgcggctc taaaccagat gtgcacgcgg aacttggctc
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tgctgtttgc acccagegtg ttccagacgg atgggcgagg ggagcacgag gtgcgagtgc
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tgcaagaget cattgatgge tacatetetg tetttgatat egattetgae caggtagete
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cagcagctgg gatggacttg tgggtgactt ttgagattcg cgagcatggg gagctggagc
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ggccactgca tcccaaggaa aaggtcttag agcaggcttt acaatggtgc cagctcccag
                                                                     1140
agccctgctc agettccctg ctcttgaaaa aagtccccct ggcccaagct ggctgcctct
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tcacaggtat ccgacgtgag agcccacggg tggggctgtt tgcggtgttc gtgaggagcc
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                                                                     1311
     <210> 321
     <211> 867
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<212> DNA

<213> Homo sapiens

```
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cttccatggg accetgeage tgggceagge ceteaaeggt gtgtaeagga ceaeggaggg
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acggctgaca aaggccagga acagcctgqq tctctatggc cqcacaataq aactcctqqq
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tcagatggag gaggatattc tgcagctgca ggcagaggcc acagctgagg tgctggggga
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ggtggcccag gcacagaagg tgctacggga cagcgtgcag cggctagaag tccagctgag
                                                                      420
gagegeetgg etgggeeetg ectacegaga atttgaggte ttaaaggete acqetqacaa
                                                                      480
gcagagccac atcctatggg ccctcacagg ccacgtgcag cggcagaggc gggagatggt
                                                                      540
ggcacagcag categgetge gacagateca ggagagaete cacacagegg egeteceage
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ctgaatctgc ctggatggaa ctgaggacca atcatgctgc aaggaacact tccacgcccc
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gtgaggcccc tgtgcaggga ggagctgcct gttcactggg atcagccagg gcgccgggcc
                                                                      720
ccacttttga gcacagagca gagacagacg caggcgggga caaaggcaga ggatgtagcc
                                                                      780
ccattgggga ggggtggagg aaggacatgt accettteat geecacacae eceteattaa
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agcagagtca aggcatctca aaaaaaa
                                                                      867
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     <211> 1144
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     <213> Homo sapiens
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tgatttttct ccttaatctg aaacgtatgg ctgctctgta gagaaggttt gggagatgct
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gaaatggggc gagaagggag cactcatcag ccttacacac ggctctgcta aggatcaggg
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ctccaggccc ctcagcctcc tccccagcat ggcagcccct tccagcctct cctatcccca
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cccatggcct ggatctcccc gggtttagct gtgcccagct gtccccagta catacttcaa
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geccaagget geatectaga catgaaaace egaggeagee atggggagte tgetgtgeca
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ggggcccatg gctctcgtcc cttccaccct ctggctgagc ccaatcctcc ccgccaaaag
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gcagggggtg acactcagcc ccggagaagg gcccctcaga gccctctgac agtgcccttt
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eccggtggge aacgetttet gecaggeatg cgeteceace agattacagg aaggetgeag
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cagcaacaac aataacagca ggctgggccc ggtggcttac acctgggatc ccagcacttt
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ataa
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     <211> 366
     <212> DNA
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     <221> misc feature
     <222> (1) ... (366)
     <223> n = a,t,c or g
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gccgaatggt cagacatcgt ggcatggatg accattattc tccagataga gacagtcatt
                                                                      180
ttottactot acctogotoc agatacagto agaccattqa coatcateac agggatqqca
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gggattgtga agcagcagat agacagccat atcacagatc cagatcaaca gaacaacggc
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ctctccttga gcggaccacc acccgctcca gatccacttg acggncttgt accaacctta
                                                                      360
tggggt
                                                                      366
     <210> 324
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aacaggtact caagacctgt ctgggctttg gcctttgggc acattccccc tcatcacctt
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cetteceact tggctgaget atggatgaga aaacetaggt caatagttea ceaacteace
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                                                                      480
gaagcatcta agatcctgga agtcaactta aattttcaat gaatgggcca gttgcaqqgg
                                                                      540
ctcacacctg taatcccagc actttgggaa gctgaggcga caggattctt tgagccccgg
                                                                      600
aatttgagac caacctgctt gggccaccta aacccatttc atcaatcaat cataatcgag
                                                                      660
ggaggggggg gattggagcc ctcattatta ggagctgagg qqqqqqccac tqqaccccqq
                                                                      720
ggtttgggtt geegggeeee tattggeeeg gaeeetggga aaaaaegaaa aeeageetee
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cttttgtttc acctgcatca tctttaagtt ttcttgatct gagttttctg cttttctgta
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accepttatcc acaggaacag taactatagt ttgtcctaat ataacgaagt ctactttata
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                                                                      480
cacatcactt gaggtcagta gtttgagacc agcctggcca aaatggagaa accccatctc
                                                                      540
aactaataat aaaaaaaatt agctgggcat ggtggcacac gtcctgtagt cccacctacc
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tgggaggctg atgcaggaga atccattgaa cccgagaggt ggaggttgca qtqaqccaaq
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atcgcaccac tccactc
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<210> 326

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ggagccctga acaggaagga gagtttcttg ctcctctccc tgcacaaccg cctgcgcagc
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taatttttca cacctccctg gctccccttt tataatttag aaagaggttt acaagtctgt
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aactttttgt attagattta ctttgagaaa tcttgtactt aatttagtag gtcacagagg
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gttgctgaat gactggaaac ttgtgtttct tttccattaa gggctatttg ctgacttctg
                                                                    600
aaatattgat gatttatttg actttagaat tttgcatact gaggggaaag catcttaatg
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aagctgaggc cgggtgcatc atttggggct taggagtttg ggaccacccc tgggccacca
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900
ctatacatcc agtttctcct caggcgggcc cattatatta aaccctagcc ggccgctccc
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cctagaggtc tacttgatct cttccctcac ttcattcaga tctgtgctga actgttaccc
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accagagaga tottocotga coattoaata toaaatatta otoottotgt tacagtaggt
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```

360

420

agctagtcag gcatgagcag ggcagaagag ggctcccctc cctcaacaca caccaggaat

gacaggcaaa catcaggtga tggtcaggca gctgctaact gtttctctaa aatattaatt

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gaacacctca agtgaacacg cgtacaactc cagtaaacac qttqcacatg gtccctttcc
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ccgtgcattt gtcttttcaa gttgcccact ttgccctctt ccaagtgtac cttccttccc
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     <221> misc_feature
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cgcgtgctga tccccctgca ctctgtcaag gcgctgtctg tcttccatgc ccaqctggca
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ctn
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121

240

300

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cctgtagtcc cacctacttg ggaggctgag gcaggagaat ggcgtgaacc tgggaggcgg
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420

435

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                                                                      360
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agatgggaga gcccaaaacc tcccgccacc cagtcctcct tnngccccac gaaatcgtcg
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aaggatgcta tggcccagca tgagtcctct tgtgagtaca gaaaggtggt gacacgtgcc
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                                                                       480
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gttttcagga aaagcctcct tgaaggataa aagccggagg gcagcttata tattgcaatt
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tgttcggatt cccccccgca ctcctttgga cactccagag aatcctcact tttctggttt
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<213> Homo sapiens

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<213> Homo sapiens

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<211> 735
<212> DNA
<213> Homo sapiens
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<213> Homo sapiens

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<210> 423
<211> 2013
<212> DNA
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<213> Homo sapiens

### <400> 423

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gggccccgtc cggagacgac ggcccaggga cactcatgtc cctccagctg ggaacacagg
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<210> 424 <211> 985 <212> DNA

<213> Homo sapiens

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aaaaaaaaga aaggaaaaga aaaagtgcaa acatgattaa aaaaaaaggt actggtctct
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<210> 425 <211> 948 <212> DNA <213> Homo sapiens

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. برد سیمر،

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<212> DNA

<213> Homo sapiens

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ccggcccggg gagccgcgcc gggaggaggg tcgggcgggt ctcagcctct cctcgcctcc
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                                                                     420
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<210> 436

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1200

1260

1281

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7.3

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<213> Homo sapiens
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     <221> misc feature
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Lity.

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1320

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1620

1680

1740

1800

1842

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ggggaggttt ttatggtttt attaatttta tttaacaaat gcttctctgg gtctagacat
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tgttctaaac acttttcaaa tattaacttc ttaatcctag gagcaacctt atgagatagg
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ttctaatatt ccctactgat gaggaaacca agatacagag atacagaaac caaggtaacc
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tgcccagagt cataacagtg cccagtggtg gagccagaca gttccacctg gagatttatg
                                                                      420
                                                                      480
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caagagtgtg atgtatttca taaaagtatt ggtctggcca ggtatgatgg cttatgcctg
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ccageggccc egetettggc teteccgggg etggcccgag tgagccggac gaagtggaca
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                                                                      360
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aaattatggc ttttcacatt tctagacatt tcttctttct tacttgggtc cctaattatt
                                                                      360
                                                                      420
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acacaggate etgeegaaat gagacaegtt egeeageaag gtggeggege tgeaggacea
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540

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2160

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gegagetete aaateeetet ceaactgeet aaageeettt gtgtaaggtg tettaataet
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1200

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4

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960

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<213> Homo sapiens

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<213> Homo sapiens

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WO 01/54477

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180
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360

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agtcggccca agaagttcaa aattatcaag gtcaggtgca ggggctcatg cttgtaatcc
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360

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PCT/US01/02687 WO 01/54477

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<210> 571
<211> 3467
<212> DNA
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<213> Homo sapiens

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<211> 2325
<212> DNA
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<213> Homo sapiens

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<210> 573
<211> 4692
<212> DNA
<213> Homo sapiens
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## <400> 573

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825

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360

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480

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1020

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			tctgtaattg			1500
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<211> 651

<212> DNA

<213> Homo sapiens

## <400> 651

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<210> 652

<211> 743

<212> DNA

<213> Homo sapiens

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ctctatctgt tcgtatgtta gtattctgat tttaagagta atcgttgtct cttcattttt
                                                                      180
atteatttea aaggaettte taattteeet tgteatttet tetttgatee gtgagteett
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cagaagggtg tagtttaatt tcaaaatatt tggggatttt tcaqacactq attttctqtt
                                                                      300
tagetetgtt geggteagag aacatgettg gtatgattte aatgettta aatgeattga
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                                                                      420
ttatagggtg gagtgtttca tttaaaagaa tacaaaggca attaaaccaa gtgggcttga
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                                                                      540
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aaagcccaga gttcaccact atg
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     <212> DNA
     <213> Homo sapiens
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     <213> Homo sapiens
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                                                                120
cctttggcaa agtgagccca tggctaagcc cagaatgagg aagtacaata catcctctga
                                                                180
gtatctcagt gagctggata ctgaggcttc cagagtctca tagacacaga aagtcatgat
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tccctggggg ccataattgc aaagtttatt aatatattat cctatatgta ttaatcctgt
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aggtcctaag gaaataattc aaatttgggg aagggaacaa agctctatgc ataagatttt
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catcagtagc aaaatatgca aaccactaag atgtccatcc attggagaat ggacacatgg
                                                                420
aagacggtgc atccatagaa ttggtggatg aagagccatt gaaaatgatg tttgggggcc
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aagcatggtg geteatgeet gtaatteeag tgaeteagga agetqaqqtg qqaqqattqe
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600
tttcaaaatt agetaggtgg tgegggeeta tgeetgtagt eecatetaet tgggaggetg
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<210> 655 <211> 1524 <212> DNA <213> Homo sapiens

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<210> 656

<211> 993

<212> DNA

<213> Homo sapiens

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cgtgatcgtc ctccaatacg tgtgccccgg cacagaatgc cagctcctcc gcctgcaggc
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gttcagctcc ccggtgccgg acccgtaccg ctcggaggat gagagctccg ccaggttcgt
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qccccqctac aatttcaccc qcqqcqacct cctqcqcaag gtagacttcg acatcaaggg
                                                                      300
                                                                      360
cgatgacctg atcgtgttcc tgcacatcca gaagaccggg ggcaccactt tcggccgcca
                                                                      420
cttggtgcgt aacatccagc tggagcagcc gtgcgagtgc cgcgtgggtc agaagaaatg
cacttgccac cggccgggta agcgggaaac ctggctcttc tccaggttct ccacgggctg
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gagetgeggg ttgcacgecg actggaccga getcaccage tgtgtgeeet eegtggggga
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cggcaagcgc gacgccaggc tgagaccgtc caggtggagg atttttcaca ttctatatgc
agcatgtacg gatatacggg gttctccaaa cactaacgca ggggccaact ctccgtcatt
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cacaaagacc cggaacacat ctaaaagttg gaagaacttt cactacatca ccatcctcca
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aggeettett geatgttgge catggaagge ecceeceet etgaaaaagt tgtecacetg
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                                                                      180
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gtaaatcttt ggaggaaatt aatttcaact gaagaaattt taaaaactat ttttgggaag
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aggctggggc aggtggatca cctgagatca ggagttcaag accagctggc caacatgcag
                                                                      780
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gcatatetea ttetteetgg gcacaagata agaacteagg acetgccaaa tgaggetaae
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                                                                      360
tetetetetg caaattgeag etaeteaace tggagaetea getgtetaet tttgtgeaga
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gatecetgaa cagagatgae aagateatet ttggaaaagg gacacgaett catattetee
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٠٠.

1020

1080

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ggtcctgctg cccctgttgg gaggacgccg cctgtcctct ctgctttcac aacaacctct
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aagacaagat aagatggaaa gcctcccgaa agacatgggt aggttcttag atgaacaatg
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ggtttatttt attatttat tattattatt tttttttcga gacagtctcg ctctgtcgcc
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tgataaaact ttagactcta aaaagattgc acacttcaga gctgagaaag agactttcag
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cgaaaaagat acatattgct atttaaaaat ggaactctga aaattaagca tctgaagacc
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cagtggcgtg ttccatgctg ctgtaggcca ggaacatggt gcagccgaag tggacggcca
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1020

1080

1127

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228

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egggacceag getacggatg aggetetata tttetgteag gegtgggaca egaatggage
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atgggttgca cctgaccagt cgtcccagaa taactcatcc tccaccccag gcagcgctga
                                                                      300
ccagagccct ccggagacta cagccaggga gtgtggctcc agggaatggg gaggaggtca
                                                                      360
teagetttge tactgteaca gaeteeactt eageetacag etecetgete aetttteace
                                                                      420
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                                                                      449
     <210> 752
     <211> 524
     <212> DNA
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                                                                      120
ctgtgtgcgg tgctgctgag cttggcctcg gcgtcctcgg atgaagaagg cagccaggat
                                                                      180
gaatcettag attecaagac tactttgaca teagatgagt eagtaaagga eeatactact
                                                                      240
gcaggcagag tagttgctgg tcaaatattt cttgattcag aagaatctga attagaatcc
                                                                      300
tctattcaag aagaggaaga cagcctcaag agccaagagg gggaaagtgt cacagaagat
                                                                      360
atcagettte tagagtetee aaatecagaa aacaaggaet atgaagagee aaagaaagta
                                                                      420
cggaaaccag gtagtctgga cattttcctt gctttttgat ttatttaggg gacaactgaa
                                                                      480
aattttaagc taatgaataa agaggctgaa gaagaaaaaa aaaa
                                                                      524
     <210> 753
     <211> 474
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc_feature
     <222> (1)...(474)
     \langle 223 \rangle n = a,t,c or g
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                                                                       60
ategeeeteg geageetegg cetecacace tggcaggeee aggetgttee caccateetg
                                                                      120
cccctgggcc tggctccaga cacctttgac gatacctatg tgggttgtgc agaggagatg
                                                                      180
gaggagaagg cagccccct gctaaaggag gaaatggccc accatgccct gctgcgggaa
                                                                      240
```

300

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tcctgggagg cagcccagga gacctgggag gacaagcgtc gagggcttac cttgcccct
ggcttcaaag cccagaatgg aatagccatt atggtctaca ccaactcatc gaacaccttg
                                                                       360
tactgggagt tgaatcangc cgtgcggacg ggcggaggct cccgggagct ctacatgagg
                                                                       420
cactttccct tcaaggccct gcatttctac ctgatccggg ccctgcagct gctg
                                                                       474
      <210> 754
     <211> 1222
     <212> DNA
     <213> Homo sapiens
     <400> 754
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                                                                       60
gccggtgccc cccatgttgg aacctgagtt ggagattatc tcctaagcag atacctgctt
                                                                       120
ccaaactggg gatgtagggc ttggaaacta aaaaatgcca ggtctgaggg agaggaaaga
                                                                       180
acaagtccag caatacacag agctctgtgt attcagaggg aagttggcag ggttgtgttc
                                                                       240
gggcagagaa actccgagtg gtacaaaggg gacgtgccca gagtggagaa atcatgctaa
                                                                       300
ttgtctgcac tagagctgga gaacgccacc caaaatgaag agagaaaggg gagccctgtc
                                                                       360
cagageetee agggeeetge geettgetee ttttgtetae ettettetga teeagacaga
                                                                       420
ccccctggag ggggtgaaca tcaccagccc cgtgcgcctg atccatggca ccgtggggaa
                                                                       480
gtcggctctg ctttctgtgc agtacagcag taccagcagc gacaggcctg tagtgaagtg
                                                                       540
gcagctgaag cgggacaagc cagtgaccgt ggtgcagtcc attggcacag aggtcatcgg
                                                                       600
caccetgegg cetgactate gggacegtat cegactettt gaaaatgget ceetgettet
                                                                       660
cagcgacctg cagctggccg atgagggcac ctatgaggtc gagatctcca tcaccgacga
                                                                       720
caccttcact ggggagaaga ccatcaacct tactgtagat gtgcccattt cgaggccaca
                                                                      780
ggtgttgggg gcttcaacca ctgtgctgga gctcagcgag gccttcacct tgaactgctc
                                                                       840
acatgagaat ggcaccaagc ccagctacac ctggctgaag gatggcaagc ccctcctcaa
                                                                      900
tgactcgaga atgctcctgt cccccgacca aaaggtgctc accatcaccc gcgtgctcat
                                                                      960
ggaggatgac gacctgtaca gctgcgtggt ggaaaacccc atcaaccagg gccggaccct
                                                                      1020
geettgtaag ateacegaat acagaaaaag eteeetttea teaatttgge teeaggagge
                                                                      1080
attttcctcc ttgggacctt ggtgaagacc tggccaacaa gggaaaaccc cgtctttatt
                                                                     1140
aaaaatacaa aaaatgcccc cgctttgggt gtaagggcct gttttcccgc gcccttcggg
                                                                     1200
aggttttgaa cagtaaatct cc
                                                                      1222
     <210> 755
     <211> 667
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc feature
     <222> (1) ... (667)
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                                                                       60
aaccaggact geteegegeg eeeetgagee tegggeteeg geeeggaeet geageeteee
                                                                      120
aggtggctgg gaagaactct ccaacaataa atacatttga taagaaagat ggctttaaaa
                                                                      180
gtgctactag aacaagagaa aacgtttttc actcttttag tattactagg ctatttgtca
                                                                      240
tgtaaagtga cttgtgaatc aggagactgt agacagcaag aattcaggga tcggtctgga
                                                                      300
aactgtgttc cctgcaacca gtgtgggcca ggcatggagt tgtctaagga atgtggcttc
                                                                      360
ggctatgggg aggatgcaca gtgtgtgacg tgccggctgc acaggttcaa ggaggactgg
                                                                      420
ggettecaga aatgeaagee etgtetggae tgegeagtgg tgaacegett teagaaggea
                                                                      480
aattgttcag ccaccagtga tgccatctgc ggggactgct tgccaggatt ttataggaag
                                                                      540
```

```
acgaaacttg tcggctttca agacatggag tggtggtngg cccttgttgg gagaaccccc
                                                                      600
ttccttccct ccctttacgg aaacceggca cttggttgcc agccaagggt ccaaaccttc
                                                                      660
ggggaaa
                                                                      667
     <210> 756
    <211> 411
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc feature
     <222> (1) ... (411)
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accettette etectettgg aaggegeaag tacteteece gacetegtta aaacteaceg
                                                                      120
aaatccctga agaaacttaa atgtcctgct cctgtccgcc ctgcttcttc accctcttcc
                                                                      180
tccactctat ttgccaagac atctcctggt ttcatcccca aactcccacc ttagattctc
                                                                      240
tottaaactg gatagatgat ctcatctttt acggcactct gtataacttc ttcccaqaaq
                                                                      300
agaegeetet gtttacette etaeteaete tatatetate eeteetgete etttggetae
                                                                      360
ctggcatggc cgcactccca cttgcagtaa tgcctaatta cctctacaaa a
                                                                      411
     <210> 757
     <211> 388
    <212> DNA
    <213> Homo sapiens
     <400> 757
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                                                                       60
ggagtegagg catttgegee tgggettegg agegtagege cagggeetga geetttgaag
                                                                      120
caggaggagg ggaggagag gtggggctct tctatcggaa cccctcccc atgtggatcc
                                                                      180
gccccaagcg gaggtcgcgg aggaggttat cgaaaatatg cccgccctgc gccccgcttt
                                                                      240
getgtgggeg etgetgagee tatggetgtg etgegegaee eeegegeetg cattgeaatg
                                                                      300
tectgaagge tatgaacect ecceactaga ecgaaagtge geteectace ecaatgteag
                                                                      360
acgatectge ceatgeceag aaggtttt
                                                                      388
     <210> 758
     <211> 843
     <212> DNA
     <213> Homo sapiens
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aggggaggga gggcccaaca ccggggtggg tgggcgcca gctgccgtcc tctgtgccac
                                                                      120
atcagtaaac agcaacacaa caatcaactg ggcctttttg atgaagacaa aaccatagag
                                                                      180
gaaaaccatt agaaqaggta ataaaggccc ttcttataca gttaatagag agcctcctqq
                                                                      240
atggaacaag accagctgtt gctactgaaa atttacttct gttttcaagt tcaaatagag
                                                                      300
actaaaacat tatcttcacg ggaattgatt ttacgtcttc caaacacata tgccacctta
                                                                      360
attgtgattt gtgtgatagt tcagctgctg aaagctttcg tttatctcta cctggttaaa
                                                                      420
```

```
caactttaaa taataacaag tcaatatatc tgtttattga ccagggttct tctcatcccc
                                                                      480
agagcacact gttgaagaag aaggtactta accetttgtt teeetageee tgecacatat
                                                                      540
                                                                      600
ctcatttttc acattctcaa tggggagata taattgttta aaaaatggaa tgaagccggg
                                                                      660
tggcatggct tacacttgta attccagcta tttgggaggc taaggcagga ggattgctcg
                                                                      720
gggcccggag ttcaagacca gtctaggcaa catagtgaga ccccatctct acaaaaaata
aaaactaaca ccccgggttc ctgactactc aaaagggtga ggcagaggat cacttgagcc
                                                                      780
cagaagcaga agctgggtga gctagactgg gcacgcactc ctcatggtgc agaagaaacc
                                                                      840
tgc
                                                                      843
     <210> 759
     <211> 647
     <212> DNA
     <213> Homo sapiens
     <400> 759
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aagcaggtgt ccacgcgtcc ggccgtccat ccgtccgtcc ctcctggggc cggcgctgac
                                                                      120
catgcccage ggetgccgct gcctgcatct cgtgtgcctg ttgtgcattc tgggggctcc
                                                                      180
eggteagect gteegageeg atgactgeag eteceaetgt gaeetggeee aeggetgetg
                                                                      240
                                                                      300
tgcacctgac ggctcctgca ggtgtgaccc gggctgggag gggctgcact gtgagcgctg
tgtgaggatg cetggetgee ageaeggtae etgecaeeag eeatggeagt geatetgeea
                                                                      360
cagtggctgg gcaggcaagt tctgtgacaa agatgaacat atctgtacca cgcagtcccc
                                                                      420
ctgccagaat ggaggccagt gcatgtatga cgggggcggt gagtaccatt gtgtgtgctt
                                                                      480
accaggette catgggegtg actgegageg caaggetgga ceetgtgaac aggeaggete
                                                                      540
eccatgeege aatggegge agtgeeagga egaecaggge tttgetetea aetteaegtg
                                                                      600
ccgctgcttg gtgggctttg tgggtgcccg ctgtgacgtg taaggtg
                                                                      647
     <210> 760
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     <212> DNA
     <213> Homo sapiens
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cgggaagcgg agattgcagt gagctgaggt cgcaccattg cactccagcc tgggtgacag
                                                                      120
ggagagggac tetgteteaa aaaaaaactg aggteaggga gggtgagatg acggtgagag
                                                                      180
                                                                      240
cteggacttg aacgeaggte ceacceagaa cageageeet aactetgage aaggtetgtg
ctgttcagta gctctattga gatgtgattt ccacactgtg taattcattc acttacggtg
                                                                      300
tacagtecag tgggtettag catgeteggt gttgacagte acategtett cacceccaaa
                                                                      360
aggaaacccc gtgcccatga gcagtcgctt tgtctgcccc tcgtccccag ccccaggcaa
                                                                      420
ccacaaatcc atgctctgtc tctgtagatt tgcctgttcc agacgtttca cagcaatggg
                                                                      480
cettttetge etggettett taacgttgea teacatette aaggteeate ecagetgeag
                                                                      540
cgtgtcagtg cctcctggct tttcactgct gagtagtgcc cgttgcatgg acagaccacg
                                                                      600
ttgtgctcac ctgtttgccc taatgggccc ctgcttgggg ctttccacct ttgggaggct
                                                                      660
gtgaattgtg ctccagccac acttttgacc cccgcccggt ttccagaaga tgaccaggat
                                                                      720
tggtcacttt cttcacccac ccaaggactt ttggtgggcc tgccgcaatc cgccccatcc
                                                                      780
                                                                      796
ttggtggctt gaggcc
```

<210> 761 <211> 721 <212> DNA

## <213> Homo sapiens

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                                                                       60
atctcccage aggetgtget etgacagete ttggatttaa ataggattet gggetetget
                                                                      120
cagagtcagg ctgctgctca gcacccagga cggagaggag cagagaagca gcagaagcag
                                                                      180
ccaagagetg gagecagace aggaacetga gecagagetg gggttgaage tggageagea
                                                                      240
gcaaaagcaa cagcagctac agaagttgga acgatgctgg tcaccttggg actgctcacc
                                                                      300
teettettet egiteetgta tatggtaget eeateeatea ggaagttett tgetggtgga
                                                                      360
gtgtgtagaa caaatgtgca gcttcctggc aaggtagtgg tgatcactgg cgccaacacg
                                                                      420
ggcattggca aggagacggc cagagagete getageegag gageeegagt etatattgee
                                                                      480
tgcagagatg tactgaaggg ggagtctgct gccagtgaaa tccgagtgga tacaaagaac
                                                                      540
teccaggtge tggtgeggaa attggaeeta tecgaeacea aatetateeg ageetttget
                                                                      600
gagggettte tggcagagga aaagcagete catattetga teaacaatge gggagtaatg
                                                                      660
atgtgtccat attccaagac agetgatggc tttgaaaccc acctgggagt caaccacctg
                                                                      720
                                                                      721
     <210> 762
     <211> 716
     <212> DNA
     <213> Homo sapiens
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                                                                       60
gggggcaatg gcggggagag cetttgtgga ccagggaage tgggggggga gttccatgct
                                                                      120
agetetataa gecaggetet ggggeageat eeaagaeget etgtattaga taetgaeeag
                                                                      180
teteatgtge caetggtgag gaggaagaca aegtgetttt eecaaaggge gatgatetee
                                                                      240
ccagatgatg accettetea ggaggeagga gegettteee ggaataacet tttggeteet
                                                                      300
tattcagctg ctgcagcaga tactcattag ttaccaccag ggatctctga ctttcatgga
                                                                      360
gaatggcaac tgtcttctcc agctttttca gctgggcaag ctcctggttc aggcaagcca
                                                                      420
cctgcatggt cagctgttgg tttttgtgca gaagatcatc ataagtatgt gactgttgcc
                                                                      480
cactcacaat tgagatggca gcaccttcct ccaactgttg aattttttct gacaaaatga
                                                                      540
ggttttcctc cagcactctg accagttttt gcttcaaact ttccgagaaa cttcttgttg
                                                                      600
aggaggaggg ggccggagcc attccagtgc ttatccacaa gctccaggag ctgtctgagg
                                                                      660
acagtggcca catggggggg tctggcagag atggggggac tgtggtttcc agccaa
                                                                      716
     <210> 763
     <211> 642
     <212> DNA
     <213> Homo sapiens
     <400> 763
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                                                                       60
gaagaccgcg cggggctgga gacaggtagc agtacggggg cggggcttca tgccggatgt
                                                                      120
gatagtetge agtegttteg gttggeagee tggegggtgg gagatgegge ggeeacetge
                                                                      180
tgcaaagaac cgaagggaag gttagaagta cgaaggcagt ttggagctgg ggctaagcag
                                                                      240
ctgtcgcacg gtcagatcat gggctccacc aagcactggg gcgaatggct cctgaacttg
                                                                      300
                                                                      360
aaggtggete cageeggegt etttggtgtg geetttetag ecagagtege eetggtttte
tatggcgtct tccaggaccg gaccctgcac gtgaggtata cggacatcga ctaccaggtc
                                                                      420
tteacegaeg eegegeett egteaeggag gggegetege ettacetgag agecaegtae
                                                                      480
egttacacce egetgetggg ttggeteete acteecaaca tetaceteag egagetettt
                                                                      540
ggaaagtttc tcttcatcag ctgcgacctc ctcaccgctt tcctcttata ccgcctgctg
                                                                      600
```

ctgctgaagg ggctggggcg ccgccaggct tgtggctact gt .

642

```
<210> 764
<211> 2280
<212> DNA
<213> Homo sapiens
```

<400> 764 aggggatteg geageteett tteagetege teggageaee eaegeetege tgeeeegett 60 getgecetea acetgggeat gegeeeceea ceetteegge ceeccagaae cegegecate 120 ecceggagee tecceagage tggeegegea ggatgggege ceteaggeee aegetgetge 180 cgccttcgct gccgctgctg ctgctgctaa tgctaggaat gggatgctgg gcccgggagg 240 tgctggtccc cgaggggccc ttgtaccgcg tggctggcac agctgtctcc atctcctgca 300 atgtgaccgg ctatgagggc cctgcccagc agaacttcga gtggttcctg tataggcccg 360 aggccccaga tactgcactg ggcattgtca gtaccaagga tacccagttc tcctatgctg 420 tetteaagte eegagtggtg gegggtgagg tgeaggtgea gegeetaeaa ggtgatqeeq 480 tggtgctcaa gattgcccgc ctgcaggccc aggatgccgg catttatgag tgccacaccc 540 cetecactga taccegetac etgggeaget acageggeaa ggtggagetg agagttette 600 cagatgteet ecaggtgtet getgeeecec cagggeeceg aggeegecag geeceaacet 660 caccccacg catgacggtg catgaggggc aggagctggc actgggctgc ctggcgagga 720 caagcacaca gaagcacaca cacctggcag tgtcctttgg gcgatctgtg cccgaggcac 780 cagttgggcg gtcaactctg caggaagtgg tgggaatccg gtcagacttg gccgtggagg 840 ctggagctcc ctatgctgag cgattggctg caggggagct tcgtctgggc aaggaaggga 900 ccgatcggta ccgcatggta gtagggggtg cccaggcagg ggacgcaggc acctaccact 960 gcactgccgc tgagtggatt caggatcctg atggcagctg ggcccagatt gcagagaaaa 1020 gggccgtcct ggcccacgtg gatgtgcaga cgctgtccag ccagctggca gtgacagtgg 1080 ggcctggtga acgtcggatc ggcccagggg agcccttgga actgctgtgc aatgtgtcag 1140 gggcacttcc cccagcaggc cgtcatgctg catactctgt aggttgggag atggcacctg 1200 cgggggcacc tgggcccggc cgcctggtag cccagctgga cacagagggt gtgggcagcc 1260 tgggccctgg ctatgagggc cgacacattg ccatggagaa ggtggcatcc agaacatacc 1320 ggctacgget agaggetgee aggeetggtg atgegggeae etacegetge etegecaaag 1380 cctatgttcg agggtctggg acccggcttc gtgaagcagc cagtgcccgt tcccqqcctc 1440 tecetgtaca tgtgegggag gaaggtgtgg tgetggagge tgtggcatgg etageaggag 1500 gcacagtgta ccgcggggag actgcctccc tgctgtgcaa catctctgtg cggggtggcc 1560 ccccaggact gcggctggcc gccagctggt gggtggagcg accagaggat ggagagctca 1620 getetgteee tgeecagetg gtgggtggeg taggecagga tggtgtggca gagetgggag 1680 teeggeetgg aggaggeeet gteagegtag agetggtggg geeecgaage categgetga 1740 gactacacag cttggggccc gaggatgaag gcgtgtacca ctgtgccccc agcgcctggg 1800 tgcagcatgc cgactacagc tggtaccagg cgggcagtgc ccgctcaggg cctgttacag 1860 tctaccccta catgcatgcc ctggacaccc tatttgtgcc tctgctggtg ggtacagggg 1920 tggccctagt cactggtgcc actgtccttg gtaccatcac ttgctgcttc atgaagaggc 1980 ttcgaaaacg gtgatccctt actccccagg tcttgcaggt gtcgactgtc ttccggccca 2040 getecaagee etectetggt tgeetggaea eesteteest etgtecaste tteetttaat 2100 ttatttgacc tcccactacc cagaatggga gacgtgcctc cccttcccca ctccttccct 2160 cccaagcccc tccctctggc cttctgttct tgatctctta gggatcctat agggaggcca 2220 tttcctgtcc tggaattagt ttttctaaaa tgtgaataaa cttgttttat aaaaaaaaa 2280

```
<210> 765
```

<sup>&</sup>lt;211> 555

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 765

```
tttegteegg gaeeagegee teeeegette gegetgeeet eggeetegee eegggeeegg
                                                                       60
gtggatgagc cgcgcgcccg ggggacatgg aagcgctgac gctgtggctt ctcccctgga
                                                                      120
tatgccagtg cgtgtcggtg cgggccgact ccatcatcca catcggtgcc atcttcgagg
                                                                      180
agaacgegge caaggacgac agggtgttec agttggeggt atcegacetg agectcaacg
                                                                      240
atgacatect geagagegag aagateaeet aetecateaa ggteategag geeaacaaee
                                                                      300
cattccaggc tgtgcaggaa gcctgtgacc tcatgaccca ggggattttg gccttggtca
                                                                      360
egtecactgg etgtgcatet gecaatgeee tgcagteeet caeggatgee atgeacatee
                                                                      420
cacacctett tgtccagege aaccegggag ggtegecaeg cacegeatge cacetgaace
                                                                      480
ccagccccga tggtgaggcc tacacactgg cttcgagacc acccgtccgc ctcaatgatg
                                                                      540
tcatgctcag gctgg
                                                                      555
```

<210> 766 <211> 2744 <212> DNA <213> Homo sapiens

<400> 766

```
geggegeegt eggetgggee eggatteece tgeggetteg atecetttee aetgggatge
                                                                       60
agaaagcete agtgttgete tteetggeet gggtetgett eetettetae getggeattg
                                                                      120
ccctcttcac cagtggcttc ctgctcaccc gtttggagct caccaaccat agcagctgcc
                                                                      180
aagageeece aggeeetggg teeetgeeat gggggageea agggaaaeet ggggeetget
                                                                      240
ggatggette cegatttteg egggttgtgt tggtgetgat agatgetetg egatttgaet
                                                                      300
tegeceagee ceageattea caegtgeeta gagageetee tgteteeeta ceetteetgg
                                                                      360
gcaaactaag ctccttgcag aggatectgg agattcagec ccaccatgcc eggetetace
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gggtggtctg tctgctcctg gcatgccctg ccacagccac tgggcccgaa gttgctcagc
                                                                      120
ctgaagtaga caccaccctg ggtcgtgtgc gaggccggca ggtgggcgtg aagggcacag
                                                                      180
accgccttgt gaatgtcttt ctgggcattc catttgccca gccgccactg ggccctgacc
                                                                      240
ggttctcagc cccacaccca gcacagccct gggagggtgt gcgggatgcc agcactgcgc
                                                                      300
ccccaatgtg cctacaagac gtggagagca tgaacagcag cagatttgtc ctcaacggaa
                                                                      360
aacagcagat cttctccgtt tcagaggact gcctggtcct caacgtctat agcccagctg
                                                                      420
aggtccccgc agggtccggt aggccg
                                                                      446
     <210> 778
     <211> 416
     <212> DNA
```

<213> Homo sapiens

```
<220>
     <221> misc_feature
     <222> (1) ... (416)
     \langle 223 \rangle n = a,t,c or g
     <400> 778
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ctgactgggt acagctggct gctcctcagt gccacattcc tgaatgtggg ggccgagatc
                                                                      120
tetateacce tggageetge ecageegage gaaggggaca acgteacget ggtegteeat
                                                                      180
gggetttegg gggaactget egectaeage tggtatgegg ggeceaeact eagegtgtea
                                                                      240
tacctggtgg ccagctacat cgtgagcaca ggcgatgaga ctcctggccc ggcccacacg
                                                                      300
gngcgggagg ctgtgcgccc cgatggcagc ctggacatcc agggcatcct gccccggcac
                                                                      360
tcaagcacct acatcctgca gaccttcaac aggcagttgc agaccgaggt gggctn
                                                                      416
     <210> 779
     <211> 382
     <212> DNA
     <213> Homo sapiens
     <400> 779
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gagttggttg gctaatggag tttgtctata tgagtacttg tttttcagat gtggctttct
                                                                      120
aattttgcaa ccttgttctt ttgatgctag tttaacggat gaagagtccc ggaaaaattg
                                                                      180
ggaagaattt ggaaatccag atgggcctca aggtgtggta aatgatgatt ttaaaatatt
                                                                      240
ggcgatatgg tatatattat aaaaatgtta accagattaa aggaataata ttattttctt
                                                                      300
actaaactta tactcacatg gagtttaaca tagataaatt gagctctcat taatttttgc
                                                                      360
tttatttttc tttctaaaga cg
                                                                      382
     <210> 780
     <211> 437
     <212> DNA
     <213> Homo sapiens
     <400> 780
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                                                                       60
ggggcttcct tttattgcgg ggcctgtgga tattcgtcac ttcttcacgg gattgactat
                                                                      120
tcctgatgga ggagtgcata taattggagg ggaaattggg gaggctttta ttatttttgc
                                                                      180
aacagatgaa gatgcaagac gtgccataag tcgttcagga gggtttatca aggattcatc
                                                                      240
tgtagagctc tttcttagta gcaaggcaga aatgcagaag actatagaaa tgaaaagaac
                                                                      300
tgatcgtgta ggaagaggc gtccaggatc tgggacatca ggggttgaca gcctgtctaa
                                                                      360
ttttattgag tctgttaagg aagaagcaag taattctgga tatggctctt caattaatca
                                                                      420
agatgctggg tttcatg
                                                                      437
     <210> 781
     <211> 476
     <212> DNA
     <213> Homo sapiens
```

```
<400> 781
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ggccagatgg gcagcaccat ggagccccct gggggtgcgt acctgcacct gggcgccgtg
                                                                     120
acatecectg tgggeacage eegegtgetg cagetggeet, ttggetgeac tacetteage
                                                                     180
ctggtggctc accggggtgg ctttgcgggc gtccagggca ccttctgcat ggccgcctgg
                                                                     240
ggcttctgct tcgccgtctc tgcgctggtg gtggcctgtg agttcacacg gctccacggc
                                                                     300
tgcctgcggc tctcctgggg caacttcacc gccgccttcg ccatgctggc caccctgcta
                                                                     360
tgcgcgacgg ctgcggtcct gtatccgctg tactttgccc ggcgggagtg tccccccgag
                                                                     420
cocgoegget gtgetgecag ggaettecge etgqeaqeea qtqtetteqe eqqqet
                                                                      476
     <210> 782
     <211> 753
     <212> DNA
     <213> Homo sapiens
     <400> 782
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acatgtatta ggtatttata ctaatgetet ccctcccctt gccctccacc cactgtaaaa
                                                                     120
ataattttta tactcttctg catttgctaa atttcctctc attagcaggt tataccttta
                                                                     180
tgatcagaaa aaaaattaaa cactgcttct aaaaaatact catctccagc acttggagat
                                                                     240
cacctacctc tacattctac ccaactgagc ccaatttagt cttctcaggg ctttgcccaa
                                                                     300
gaacagttca ggaatgcatg cetetgaagg cetteetget etteceette tggeettggt
                                                                     360
atctcattct cattcctgcc ctcccctacc tctccaaccc catcacttgc cagccatcct
                                                                     420
gttcttcctt gttggtcatc agttaatgaa gtgtattagg tgacctgagt acttgtcagt
                                                                     480
actteccaga ggcaagaaca tteetegcag ateaaggtae etttaagage caagaagete
                                                                      540
agatttggag gcgggagagc tgtactgcat cccctcaaat gttagcagtg ccaagaaatg
                                                                     600
agacgctagt ctagggggca ccacaagcag aaaggggctg tttcaaggag tcgtccgccc
                                                                     660
atgggagtct cctcttctat tattcacctt gctccaagga tatcttttct tttacgtatg
                                                                     720
aaaattttgt aattgttcaa ctataacacc atg
                                                                      753
     <210> 783
     <211> 769
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc feature
     <222> (1)...(769)
     <223> n = a,t,c or g
     <400> 783
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atacaaacag catttaggaa ggtctcatct gagtagcagc ttcctgccct ccttcttgga
                                                                     120
gataagtegg gettttggtg agacagaett teceaaceet etgeeegge ggtgeecatg
                                                                     180
cttctgtggc tgctgctgct gatcctgact cctggaagag aacaatcagg ggtggcccca
                                                                     240
aaagetgtae tteteetega teeteeatgg teeacageet teaaaggaga aaaagtgget
                                                                     300
ctcatatgca gcagcatatc acattcccta gcccagggag acacatattg gtatcacgat
gagaagttgt tgaaaataaa acatgacaag atccaaatta caqagcctgg aaattaccaa
                                                                     420
tgtaagaccc gaggatcctc cctcagtgat gccgtgcatg tggaattttc acctgactgg
                                                                     480
ctgatcctgc aggctttaca tcctgttttt gaaggagaca atgtcattct gagatgtcag
                                                                     540
gggaaagaca acaaaaacac tcatcacaag gtttactaca aggatggaaa acagntttct
                                                                     600
aatagttata atttagagaa gaatacagtg gattcagtct cccgggataa tagcccatat
                                                                     660
tattgtgctg ggtaaaagag agtttacata cttgggattg gagaacttta aaacccccaa
                                                                     720
```

```
769
ttatccaagt ttacgggaag gggcctatac tccggagtac caggggggg
     <210> 784
     <211> 979
     <212> DNA
     <213> Homo sapiens
     <400> 784
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120
ccgtggcagt gaccagaagg ggccggaagg gggtggccgc cggccgggcc ccgccctggg
                                                                    180
geogectece egegggttee gttggetgtg geggeagetg aegettgtgg eggeggtgge
                                                                    240
tteggggtgg gegtaagatg gegacageag egeagggace eetaagettg etgtggget
                                                                    300
ggctgtggag cgagcgcttc tggctacccg agaacgtgag ctgggctgat ctggaggggc
                                                                    360
eggeegaegg etaeggttae eeeegeggee ggeacateet eteggtgtte eegetggegg
                                                                    420
egggeatett ettegtgagg etgetetteg agegatttat tgeeaaacce tgtgeactee
                                                                    480
gtattggcat cgaggacagt ggtccttatc aggcccaacc caatgccatc cttgaaaagg
                                                                    540
tgttcatatc tattaccaag tatcctgata agaaaaggct ggagggcctg tcaaagcagc
                                                                    600
tggattggaa tgtccgaaaa atccaatgct ggtttcgcca tcggaggaat caggacaagc
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ccccaacqct tactaaattc tgtqaaaqca tqtaagtacg caaggaggga ggqaqggaat
                                                                    720
aaggaagacg gtgggataca actggactga agtttctgtt ttgaacatca cttctgttgt
                                                                    780
taggacaaca gttaatggat atagagaact aactcagcct attataggta ggaaagaagg
                                                                    840
gaactggaac actgattccc ttaagtttct tgggcatgtt gccactaagc taggtgtggt
                                                                    900
totattttgt toocttttcc taaatagatt gggagtaaat cottataact gtacttatgt
                                                                    960
aagtagatgt actaacaca
                                                                    979
     <210> 785
     <211> 550
     <212> DNA
     <213> Homo sapiens
     <400> 785
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cggcgccgtg gcggaggagc aggagcagga gggggatgga gaggagaagg ctcctgggtg
                                                                    120
gcatggcgct cctgctcctc caggcgctgc ccagcccctt gtcagccagg gctgaacccc
                                                                    180
cgcaggataa ggaagcctgt gtgggtacca acaatcaaag ctacatctgt gacacaggac
                                                                    240
actgctgtgg acagtctcag tgctgcaact actactatga actctggtgg ttctggctgg
                                                                    300
tgtggaccat catcatcatc ctgagetget getgtgtttg ccaccaccgc egagecaage
                                                                    360
accycettea gycccaycay cyycaacaty aaatcaacet yatcycttac cyayaagece
                                                                    420
acaattactc agegetgeca ttttatttca ggtttttgec aaactattta ctacctectt
                                                                    480
atgaggaagt ggtgaaccga cetecaacte etcececace atacagtgee ttecagetae
                                                                    540
agcagcaacq
                                                                    550
     <210> 786
     <211> 932
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc_feature
     <222> (1) ... (932)
```

<223> n = a,t,c or q

```
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                                                                      120
                                                                      180
ggtcttcgcc ctcccgccca aggaaggccg ctgcttgttt gtcatcctgc tcatggcggt
gtactggtgc acggaggccc tgccgctctc agtgacggcg ctgctgccca tcgtcctctt
                                                                      240
                                                                      300
ccccttcatg ggcatcttgc cctccaacaa ggtctgcccc cagtacttcc tcgacaccaa
ettectette eteagtggge tgateatgge cagegecatt gaggagtgga acetgeaceg
                                                                      360
gegaategee etcaagatee tgatgettgt tggagteeag eeggeeagge teateetggg
                                                                      420
gatgatggtg accaectegt tettgteeat gtggetgage aacaeegeet eeactgeeat
                                                                      480
gatgcttccc attgccaatg ccatcctgaa aagtctcttt ggccagaagg aggttcgaaa
                                                                      540
ggacccccag ccaggagagt gaagagaaca cagggaatag aaccccaata cctntcctct
                                                                      600
ctgaggaaag gctgaaactt caagctcccc ttgtgataag acttggtcag ataactgagt
                                                                      660
ctggtcaatg gaatatgagt ggaaatgatg tgtgcaactt ccgggttctg tccttcctgc
                                                                      720
cgggtggaat gtgaatatga tggcacctgg gacccaaaga caggagccac atcttgagag
                                                                      780
atagatggca gatctgcccc tgtggctttg gatcatttac ctcagtgaac acaacaagca
                                                                      840
ttatccatga aaccataggt tttgtgtgct agttctagtt tttaaaatat gaattaaatt
                                                                      900
aaatacgtat ctgttaaaac ttaaaaaaaa aa
                                                                      932
     <210> 787
     <211> 514
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc_feature
     <222> (1)...(514)
     <223> n = a,t,c or g
     <400> 787
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                                                                       60
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                                                                      120
etgtteecca tecteecage cetteetget gtacetgtgg ggagetgate tecteagtee
                                                                      180
ccctgctttt ccccggtctg ccatcaccac cccaccacca tgcaccccct tcctggctac
                                                                      240
tggtcctgtt actgtctact cctgctattc tccttgggag tccaggggtc cctgggggct
                                                                      300
cccagcgctg ccccagagca agtccatctg tcttacccag gtgagccagg ctccatgact
                                                                      360
gtaacttgga ccacatgggt cccaacccgc tctgaagtgc aattcgggtt gcagccgtcg
                                                                      420
gggcccctgc ccctccgcgc ccagggcacc ttcgtcccct ttgtggacgg nggcattctc
                                                                      480
cggcggaagc tctacataca ccgagtcacg cttc
                                                                      514
     <210> 788
     <211> 469
     <212> DNA
     <213> Homo sapiens
     <400> 788
cccgtaattc tcgggtcgac gatttcgtgg cgcggaggag ctctgtccgg aatcacatag
                                                                       60
ataccategt ggaaacagca gegeaggtea eggegeegeg ggeeetgeac cagacqetgg
                                                                      120
gctctagaga ttatttctct ttattcagaa gcatacagtt gtttgctgat tgcaagaaga
                                                                      180
tgtttctgtg gctgtttctg attttgtcag ccctgatttc ttcgacaaat gcagattctg
                                                                      240
acatatoggt ggaaatttgc aatgtgtgtt cotgogtgtc agttgagaat gtgctctatg
                                                                      300
```

```
tcaactgtga gaaggtttca gtctacagac caaatcaget gaaaccacct tggtctaatt
tttatcacct caatttccaa aataattttt taaatattct qtatccaaat acattcttqa
                                                                     420
atttttcaca tqcaqtctcc ctqcatctgg ggaataataa actqcaqat
                                                                      469
     <210> 789
     <211> 525
     <212> DNA
     <213> Homo sapiens
     <400> 789
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                                                                      60
aactacagct tettggcage gteggtgttg geegegggag aaggggagae egeggegee
                                                                     120
cccagtgaga gcggctttcc aggacggtgc gatgtgctgc gcagcgaaga ggcaggaggc
                                                                     180
eggetteetg gggtageggt acaggeggge gettactetg tgegettget tecceaacce
                                                                     240
tgcaccggcc atgcgcccgg ccttggcggt gggcctggtg ttcgcaggct gctgcagtaa
                                                                     300
cgtgatcttc ctagagctcc tggcccggaa gcatccagga tgtgggaaca ttgtgacatt
                                                                     360
tgcacaattt ttatttattg ctgtggaagg cttcctcttt gaagctgatt tgggaaggaa
                                                                     420
gccaccagct atcccaataa ggtactatgc cataatggtg accatgttct tcaccgtgag
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cgtggtgaac aactatgccc tgaatctcaa cattgccatg cccct
                                                                      525
   - <210> 790
     <211> 377
     <212> DNA
     <213> Homo sapiens
     <400> 790
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                                                                      60
tgactgtgtt gggaacatct ggagtcctta cagagataat caagttaaaa tgaggtcatt
                                                                     120
agtgtgggtc ctaatccaac aactgacgcc cttatacaaa ggagaaacct ggacacagac
                                                                     180
atgcacagaa gaccatgtga ccatgaaggc agagatcaga gtgatgcttc tagaagccag
                                                                     240
ggaagattgc cagttaatga ccaaaagaag ccaggagaca ggcctgcaac ggattctgcc
                                                                     300
tgaaggetee cagaaggaac caaccetgae aacacettga tettggaett ceaaceteea
                                                                     360
gagctgggag gcgacac
                                                                     377
     <210> 791
     <211> 637
     <212> DNA
     <213> Homo sapiens
     <400> 791
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                                                                      60
ttagtctctc taaaatttca gggaaaaact atgagtctca aaatgcttat aagcaggaac
                                                                     120
aagetgattt tactactagg aatagtettt tttgaacgag gtaaatetge aactettteg
                                                                     180
ctccccaaag ctcccagttg tgggcaqagt ctggttaagg tacagccttq qaattatttt
                                                                     240
aacattttca gtcgcattct tggaggaagc caagtggaga agggttccta tccctqgcag
                                                                     300
gtatetetga aacaaaggea gaageatatt tgtggaggaa geategtete accaeagtgg
                                                                     360
gtgatcacgg cggctcactg cattgcaaac agaaacattg tgtctacttt gaatgttact
                                                                     420
gctggagagt atgacttaag ccagacagac ccaggagagc aaactctcac tattgaaact
                                                                     480
gtcatcatac atccacattt ctccaccaag aaaccaatgg actatgatat tgcccttttg
                                                                     540
aagatggetg gageetteea atttggeeae tttgtgggge ceatatgtet tecagagetg
                                                                     600
```

```
cgggagcaat ttgaggctgg ttttatttgt acaactg
                                                                      637
     <210> 792
     <211> 881
     <212> DNA
     <213> Homo sapiens
     <400> 792
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                                                                       60
aacttettae gettteatga taeatttate tagttetgtt atteaagtta aagtattata
                                                                      120
cagttaagtc tatggcagag tcagattctt ttatgtgtct aactgttgcg aagtatagac
                                                                      180
ttcttatatc ttatatggtg accattaaca tataacgagc atgctagcat attgttgtct
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ttgagagcac cgtatcaact ttttgatctg tagaatgaca gaagccacat tcgatactct
                                                                      300
gcgactctgg ttaataatcc tgctgtgtgc tttgcggttg gccatgatgc gtagtcacct
                                                                      360
gcaagcttat ttaaatttag cccaaaaatg tgtggatcag atgaagaaag aagcggggcg
                                                                      420
aataagcacg gttgagctac agaaaatggt ggctcgagtc ttttattatc tttgtgtcat
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tgcactgcag tatgtggcgc ctctggtaat gctgcttcac acaactctgc ttttgaaaac
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actaggtaat cattcctggg gtatttatcc agaatctatc tctaccttac cagtggataa
                                                                      600
tagtctactg tccaattctg tttactctga attaccatca gctgaaggga aaatgaagca
                                                                      660
taatgcaagg caaggtccag ccgttccacc cggcatgcaa gcttatggag cagcccctt
                                                                      720
tgaagatctc cagctagact tcacagagat gccaaagtgt ggagatctta ttcctagatt
                                                                      780
tggactgccc ttacggatcg gctcagataa tgggctggcg tttgtggctg acttggtaca
                                                                      840
gaagacggca aagtggaaag gaccccagat tgtcgttctg c
                                                                      881
     <210> 793
     <211> 622
     <212> DNA
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     <400> 793
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                                                                      120
gecaecatee tettetggge ageggeagea tgggetaaat caggeaagee ttegggagag
                                                                      180
atggacgaag ttggagttca aaaatgcaag aatgccttga aactacctgt cctggaagtc
                                                                      240
ctacctggag ggggctggga caatctgcgg aatgtggaca tgggacgagt tatggaattg
                                                                      300
acttactcca actgcaggac aacagaggat ggacagtata tcatccctga tgaaatcttc
                                                                      360
accattecce agaaacagag caacetggag atgaacteag aaateetgga atcetgggca
                                                                      420
aattaccaga gtagcacctc ctactccatc aacacagaac tctctctttt ttccaaagtc
                                                                      480
aatggcaagt tttccactga gttccagagg atgaagaccc tccaagtgaa ggaccaagct
                                                                      540
ataactaccc gagttcaggt aagaaacctc gtctacacag tcaaaatcaa cccaacttta
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gagctaagct caggttttag ga
                                                                      622
     <210> 794
     <211> 1177
     <212> DNA
     <213> Homo sapiens
     <400> 794
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gcagcagatg cacatggccc tgcactgaga agcgcccagc tcactgcacc tgcactcagg
```

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aattgtagga ctccctctag gagttgggca catgtcgttg gtgggagccc tgtccctgcc
ttgagaaagc tgtaggtgtt ctgtgtccag ctgtgcacct gtcctttgtt tttgtgagtc
                                                                  240
ttettggatg cacetgaate etgcatteag gaggeetate cettgttete tgctagcaac
                                                                  300
cetgeetget atetetete eggtgeeete teagecatea gaccagaget tgettettee
                                                                  360
ctgcttgggc agggaagtgc caggtaaagg gtggtctcct ttagccacaa ggggtggctg
                                                                  420
accttatgac ctcccgcctc tgagcagaaa ggtgacaggc tgcttttggt taccctcagg
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gcccagcaga gtcccctgag aggcagcctc tgttgggagc aggtggcaca actttgttta
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gctctacaag gcaggaggag tttaatagta cttctcatta gcactgaaat ttgtttccaa
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agcacttgtg tgtacaatat ttaatttaga tcttctcagt gggcctgtgg gttagaatag
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catgtgggat tgatgggttc atcattttac atctaaggaa aatgagcctt cggttgggac
                                                                  720
ctgcctggag gcacttaaca tgccttggga ctaaacactc caaggcaaac tctgttctgg
                                                                  780
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ctgaggggt ccaccgtcag gcactcagtc aggctgctca ggagctgaat gtgctctctc
                                                                     1800
ttgggatcca tettetgagg gtgaageteg agtgageggg geaggeaget gteaacaggg
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agetettet teateteagg gggacageta gg
                                                                     1892
     <210> 817
     <211> 687
     <212> DNA
     <213> Homo sapiens
     <400> 817
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                                                                      120
gtetgtggte egeaaggeee eagtggagee ettgggttee egeagaaceg aetgggtete
                                                                      180
cagtagtete tgaggageeg etegacette teeegaeeet ggatetgagg eaggagatge
                                                                      240
ctecccegeg ggtgttcaag agetttctga geetgetett ecaggggetg agegtgttgt
                                                                      300
tatecetgge aggagacgtg etggteagea tgtacaggga ggtetgttee atecgettee
                                                                      360
tgttcacggc tgtgtcgctg ctgagcctct ttctgtcagc attctggctg gggcttctgt
                                                                      420
acctggtctc tcctttggag aatgaaccta aggagatgct gactctaagt gagtaccacg
                                                                      480
agegegegeg ctcccagggg cagcagetgc tgcaatttca ggccgagetg gataaactcc
                                                                      540
acaaggaggc gtcccttgtt tgcggctgcc cctccctgag agaggtgcca agctccgccg
                                                                      600
teteaagget ggaaceacet tetategege aacecettet etetegtete eagetttatt
                                                                      660
tatccgaccc ctcatcatat ctcgtcc
                                                                      687
     <210> 818
     <211> 372
     <212> DNA
     <213> Homo sapiens
     <400> 818
cgctgagatg tatacctggc aggtgggcaa taattagacg agaataaaag acacttgcat
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cattgccaga agtgtgtaaa cttctttttg cttcttttcc tggaggaata gaagagagag
                                                                      120
acagtcccca atgtgtggag aatttctctt catcagcata tatagctgtg atatgtaaag
                                                                      180
gagcatcaaa ggtctcataa gtttcatcgt cgttaaaata tacaaaaagg gctgtcaatg
                                                                      240
cttgagacat cagaattaac atacactete tettegtaac agtecaeggt tgetacetat
                                                                      300
taacegteec eggttaatae ettttateea tageeggeea eeaceteata eecateeeet
                                                                      360
gtgccctgta tt
                                                                      372
     <210> 819
     <211> 445
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc feature
     <222> (1)...(445)
     <223> n = a,t,c or g
     <400> 819
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60

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actgagttct agtttgaagc tgtttaccct cgcagctctc tgactggcac ccctgcctgc
                                                                       120
etgeceggee etgeacaaca tgeagecete eggeetegag ggteeeggea egtttggteg
                                                                       180
gtggcctctg ctgagtctgc tgctcctgct gctgctgctc cagcctgtaa cctgtgccta
                                                                       240
caccacgeca ggecececa gageceteae caegetggge gececeagag cecacaccat
                                                                       300
gccgggcacc tacgctccct cgaccacact cagtagtccc agcacccaag gcctgcaaga
                                                                       360
gcaggcacgg gccctgatgc gggacttccc gctcgtggac ggccacaacg acctgcccct
                                                                       420
ggttctaagg caggtttacc acaat
                                                                       445
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     <211> 425
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc feature
     <222> (1)...(425)
     \langle 223 \rangle n = a,t,c or g
     <400> 820
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gtgcgagagc gagatcagct cacttaccca ctcagactac gatccgaaag cataaccagt
                                                                       120
tcagtctact ggtgccggga agactggcca aatcaggaaa tgaggaagat ctacaccact
                                                                      180
gtgctgtttg ccaacatcta cctggctccc ctctccctca ttgtcatcat gtatggaagg
                                                                      240
attggaattt cactcttcag ggctgcagtt cctcacacag gcaggaagaa ccaagagcag
                                                                      300
tggcacgtgg tgtccaggaa gaagcagaag atcattaaga tgctcctgat tgtggccctg
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ctttttattc tctcatggct gcccctgtgg actctaatga tgctctcaga ctacgctaaa
                                                                      420
                                                                       425
     <210> 821
     <211> 706
     <212> DNA
     <213> Homo sapiens
     <400> 821
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ageetgggtg acagagaaag atcetgteee aaataaetaa gtaaataaga tggeetgaae
                                                                      120
acttgcaccc ctaaacctgc totgtcccag tgtgccccct cgaaaatggt ctgggttctg
                                                                      180
tatgtaactg ggcctctctc ctgcagagat cctctcagac tccgaggagg accgggtatc
                                                                      240
ttctaatacc aacagctatg actacggtga tgagtaccgg ccgctgttct tctaccagga
                                                                      300
gaccacgget cagatectgg teegggeeet caateceetg gattacatga agtggagaag
                                                                      360
gaaatcagca tactggaaag ccctcaaggt gttcaagctg cctgtggagt tcctgctgct
                                                                      420
cctcacagtc cccgtcgtgg acccggacaa ggatgaccag aactggaaac ggcccctcaa
                                                                      480
ctgtctgcat ctggttatca gccccctggt tgtggtcctg accctgcagt cggggaccta
                                                                      540
tggtgtetat gagataggeg geetegttee egtetgggte gtggtggtga tegeaggeae
                                                                      600
agcettgget teagtgacet tttttgccac atctgacage cagececca ggetteactg
                                                                      660
getetttget tteetggget ttetgaceag egecetgtgg ateaac
                                                                      706
     <210> 822
     <211> 357
     <212> DNA
     <213> Homo sapiens
```

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<400> 822
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                                                                       60
ttggaaggaa atgggccatg ctggtcaaca atgttctqgc qqqqctqqqq ggcaccctta
                                                                      120
tgggcctggc caacgttgct gactcctata aaatgctcat ccttgtacga ttccttttt
                                                                      180
tegectactg acgegetggg ettggagtee ettetgggaa etgecageet gtggecactg
                                                                      240
ctcctgagcc tcacagagct acctgccctc ctgcaaatgt gactgctgac cttctgttcc
                                                                      300
gaaagacccc gctacctcta cgtaatacat aatttcgagg gacctgccag aattagt
                                                                      357
     <210> 823
     <211> 402
     <212> DNA
     <213> Homo sapiens
     <400> 823
egggtegace caegegteeg ateegageta ateaqteaat acaaqteaca tqqqtttatq
                                                                       60
gatatgetee atgacaagtg gtacagggtg gtteeetgtg geaagagaag ttttgetgte
                                                                      120
acggagactt tgcaaatggg catcaaacac ttctctgggc tctttgtgct gctgtgcatt
                                                                      180
ggatttggtc tgtccatttt gaccaccatt ggtgagcaca tagtatacag gctgctgcta
                                                                      240
ccacgaatca aaaacaaatc caagctgcaa tactggctcc acaccagcca gagattacac
                                                                      300
agagcaataa atacatcatt tatagaggaa aagcagcagc atttcaagac caaacgtgtg
                                                                      360
gaaaagaggt ctaatgtggg accccgtcag cttaccgtat gg
                                                                      402
     <210> 824
     <211> 348
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc_feature
     <222> (1)...(348)
     <223> n = a,t,c or g
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tgaagaaact ctccatcgtt gtctccctgg ggacagggag gnccccacaa gtgcctgtga
                                                                      120
cctgtgtgga tgtgatatct agcagcatca ccggttactt acgttcgtat gtttttggtg
                                                                      180
tcaattatat gtgttactct cttctttcct attgtagctc tcttcgatct ttacgccact
                                                                      240
ctcgctcact gtgtgtacgc gttttctact gactctcttc tgcctgctgt gatgcttact
                                                                      300
gegetteete gtagtetett ettttegteg tegttgattt tateateg
                                                                      348
     <210> 825
     <211> 347
     <212> DNA
     <213> Homo sapiens
     <400> 825
ggcacgagec ggtgggteta cageggaagg gagggagega aggtaggagg cagggettge
                                                                      60
etcactggcc acceteccaa ecceaagage ceageeccat ggteeegge geeggegege
                                                                      120
```

```
tgctgtgggt cctgctgctg aatctgggtc cccgggcggc gggggcccaa ggcctgaccc
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agactccgac cgaaatgcag cgggtcatgt tacgctttgg ctgctctgtc atctgttgct
                                                                      240
attgtatctc agttcgtact ggtcggtccc gggaaactgg atagtctgga gcagtcgatt
                                                                      300
atgtactcgg catctctttg agttgatgga gtatcgatgt gtggttg
                                                                      347
     <210> 826
     <211> 649
     <212> DNA
     <213> Homo sapiens
     <400> 826
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gcaaagtaga tgttactaaa gattttgaag ggatgtgtag tctttcatca cctaccttgc
                                                                      120
agcactcaag tttacaaacc ctcattgggc atgtgggggt tcctgagtcc cctgtgggaa
                                                                      180
gtggtttttt gccatacacc ttgtttcaga gctcagcctc agttagacag ggcaggctcc
                                                                      240
agttteetea tetaceeete teeceacage acetetaatt aaceageeet tttettacea
                                                                      300
ctgagaaatt gaactctact aaataattac agccttgtgc cacataatga cgttttggtt
                                                                      360
aacaggggac cgtgtgtata atggtggtct cataagaata taataccatg ggtttactat
                                                                      420
acttttctat atttagaaat gtttagattt aagttagata tggttagatt taaaatacgt
                                                                      480
aacacagget ggacceggta geteatgeet ggaateceag caetttggga ageegagttg
                                                                      540
ggtggatcac ctgagggcag gagtttggaa ccaccctggc caacttgggg gaccccatte
                                                                      600
ttctaaaaaa cacacattac ctggggggg gcgagccctt tatcctacc
                                                                      649
     <210> 827
     <211> 791
     <212> DNA
     <213> Homo sapiens
     <400> 827
ggcacgagac tgttcactac ctcctctacc tggccatggc cggcgccatc tgcagaagga
                                                                       60
agagataccg gaattttgga ctctactggc tgggttcctt cgccatgagc atcctggtgt
                                                                      120
teettacagg aaacattett ggcaaataca geteegagat caggeetgee ttetteetea
                                                                      180
ccatccccta cctgctggtg ccatgctggg ctggcatgaa ggtcttcagc cagcccggg
                                                                      240
cgctaacccg ctgcaccgcc aacatggtgc aagaggaaca aagaaaggga ctcctgcagc
                                                                      300
gtccggctga cctggccctt gtcatatatc tcatccttgc tggcttcttc actctgttcc
                                                                      360
ggggcctggt ggtgcttgat tgccccacag atgcctgctt tgtctatatc taccagtatq
                                                                      420
agccatacct gcgggaccct gtggcctacc ctaaggtgca gatgctgatg tacatgtttt
                                                                      480
atgtcctgcc tttctgcggc ctggctgcct atgctctcac cttccctggt tgctcctggc
                                                                      540
ttccagactg ggccttggtg tttgctggag gcatcggcca ggcacagttc tcgcacatgg
                                                                      600
gggcttccat gcacctgcgc acaccettca cctaccgtgt gcctgaggac acctggggct
                                                                      660
gettettegt gtgcaatetg etgtatgege tgggeececa cetgetggee tacegttgee
                                                                      720
ttcagtggcc cgcattcttc caccagccac caccctccga ccccctagcc ctccacaaga
                                                                      780
agcagcattg a
                                                                      791
     <210> 828
     <211> 348
     <212> DNA
     <213> Homo sapiens
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<400> 828

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tttaaaaact tgagtatget tttgcttctg acttggccct acatccttct gggatttctg
                                                                      120
ttttgtgctt ttgtagtagt taatggtgga attgttattg gcgatcggag tagtcatgaa
                                                                      180
geotgeette attitectea actattetae tittiteat tiactetett tittiteetti
                                                                      240
cctcatctcc tqtctcctaq caaaattaag acttttcttt ccttagtttq qaaacqtaga
                                                                      300
attctgtttt ttgtggttac cttagtctct gtgtttttag tttggaat
                                                                      348
     <210> 829
     <211> 638
     <212> DNA
     <213> Homo sapiens
     <400> 829
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gategeagtg atgetggegg egeteatgte gtegetgaee tecatettea acageageag
                                                                      120
caccetette actatggaca tetggaggeg getgegteee egeteeggeg agegggaget
                                                                      180
cctgctggtg ggacggctgg tcatagtggc actcatcggc gtgagtgtgg cctggatccc
                                                                      240
cgtcctgcag gactccaaca gcgggcaact cttcatctac atgcagtcag tgaccagctc
                                                                      300
cctggcccca ccagtgactg cagtctttgt cctgggcgtc ttctggcgac gtgccaacga
                                                                      360
gcagggggcc ttctggggcc tgatagcagg gctggtggtg ggggccacga ggctggtcct
                                                                      420
ggaatteetg aacceagece cacegtgegg agagecagae aegeggeeag eegteetggg
                                                                      480
gagcatccac tacctgcact tegetgtege ectetttgca etcagtggtg etgttgtggt
                                                                      540
ggctggaage etgetgaece cacceccaca gagtgtecag attgagaace ttacetggtg
                                                                      600
gaccetgget caggatgtge cettgggaae taaageag
                                                                      638
     <210> 830
     <211> 428
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc_feature
     <222> (1) ... (428)
     <223> n = a,t,c or g
     <400> 830
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                                                                       60
ttcatgctgg ccaccgtggt gctgtacttc agccacctca aggagtatgt ggcttccatg
                                                                      120
gtatteteee tggeettggg etggaeeaae atgetetaet acaeeegegg ttteeageag
                                                                      180
atgggcatct atgccgtcat gatagagaag atgatcctga gagacctgtg ccgtttcatg
                                                                      240
tttgtctaca tcgtcttctt gttcgggttt tccacagogg tggtgacgct gattgaagac
                                                                      300
gggaagaatg actecetgee gtetgagtee acgtegeaca ggtggegggg tttttetnan
                                                                      360
accccctct ntcttctaca taaactgtac tccacctgcc tggaactgtc caactccacc
                                                                      420
atngattg
                                                                      428
     <210> 831
     <211> 892
     <212> DNA
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<213> Homo sapiens

```
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cccggaaget gggaaatgac ttattaacet tcatggcetc tggtettetg aggaageagt
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ctgaggagcc cgagttttga aaagggaagc aatcctccaa ggctgcgatt tccacagaaa
                                                                      120
tcacatgtga gccacaggtg tcattttaaa atttctagta gcaacagaaa cgaggaataa
                                                                      180
acagatggtg tttgagtcac tgaatttttg gaaggacttc aaatgtcaag cattattctc
                                                                      240
catgaacagg gtgatgaggg gtctggccat caccaccacc tgcctcctga gcatgctcca
                                                                      300
ggccatcacc atcagcccta gcatcttgtg gaatcatgct gctgtccagt atgtacacgg
                                                                      360
tcattetett gttcaggeat gagaggtgat accagageet tegcaacace ageegeteee
                                                                      420
caagageete eecagagaaa agggeeatge agaccageet gtgtettetg gaactggaac
                                                                      480
acggactacc cacccctatg ttgaggcagc ttctgacagg ccttactgct tacggtcatc
                                                                      540
ggtcatcagc ccacccgett gcatctccag ctgcaagtca ctctgggccc agttctcaga
                                                                      600
caaggccaag teggecaeae eaggggetet etggggagee tggaggaagg ttgactettt
                                                                      660
agtetgetge ateteageea ggagtteate catettgaag gtetgagggg caeggggata
                                                                      720
caacgggcca actggggccc theatagaat acceccacce tattettte cgaacetete
                                                                      780
tecaaggete tgaagaetge eteegaegte tgtetetege geeegegeea eeegtaaace
                                                                      840
actacgaete ticacicati ecigcaagie ticaciceet ciacicegai ge
                                                                      892
     <210> 832
     <211> 312
     <212> DNA
     <213> Homo sapiens
     <400> 832
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                                                                       60
gcgatatgac tgccagactt atgcggtctt tgctggctgc acaacttaca tttgtatata
                                                                      120
gggtggcgca tctaatgaac gttgctcaac gcataagggg aaatcgtccc attaagaatg
                                                                      180
agagactact tgcattgctt ggagataatg aaaagatgaa tttgtcagat gtggaactta
                                                                      240
tecegttgee tttagaacee caagtgaaaa ttagaggaat aatteeggaa acagetacae
                                                                      300
tgtttaaaaq tq
                                                                      312
     <210> 833
     <211> 426
     <212> DNA
     <213> Homo sapiens
     <400> 833
gccataattt ctttcttcat tggatttgga ctaagatttg gagcaaaatg gaactttgca
                                                                      60
aatgcatatg ataatcatgt ttttgtggct ggaagattaa tttactgtct taacataata
                                                                      120
ttttggtatg tgcgtttgct agattttcta gctgtaaatc aacaggcagg accttatgta
                                                                      180
atgatgattg gaaaaatggt ggccaatatg ttctacattg tagtgattat ggctcttgta
                                                                      240
ttacttagtt ttggtgttcc cagaaaggca atactttatc ctcatgaagc accatcttgg
                                                                      300
actettgeta aagatatagt ttttcaccca tactggatga tttttggtga agtttatgca
                                                                      360
tacgaaattg atgtgtgtgc aaatgattct gttatccctc aaatctgtgg tccgtcgacg
                                                                      420
cggccg
                                                                      426
     <210> 834
     <211> 445
    <212> DNA
```

<213> Homo sapiens

```
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caacaqqacc tqcaqcatcc caqaggaact qactaaqact ttqqaacaqa aaccaqatqa
tgcacaatat tatcqtcaaa gagcttattg tcacattctt cttqqqaatt actgtggtgc
                                                                      180
agatgctaat ttcaqtgact ggattaaaag gtgtcqaagc tcaqaatggc tcggaatctg
                                                                      240
aggtgtttgt ggggaagtat gagacceteg tgttttactg gecetegetg etgtgeettg
                                                                      300
cetteetget gggeegette etgeatatgt ttgteaagge tetgagggtg cacetegget
                                                                      360
gggageteca ggtggaagaa aaatetgtee tggaagtgca eeagggagag caegteaage
                                                                      420
agetectgag gatacecege cetea
                                                                       445
     <210> 835
     <211> 487
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc feature
     <222> (1) ... (487)
     \langle 223 \rangle n = a,t,c or g
     <400> 835
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                                                                       60
cgtgcgggat acaggcctag gctatggtaa ttgtaagcgg aagtgaaata aatattttat
                                                                      120
ttgtgtgtgc atttatttaa caaacattaa ttatctcctt gattaataaa gcactgttcc
                                                                      180
tgccctcaag tagttcatgg tgggctagtc caagaacaat taaatatagt atgactatac
                                                                       240
atttatgtag taatctaatg tgtcatttct tgcagagaat gggaacaatt ctcctttgcc
                                                                       300
caaatatgca acctcaccaa aacctaacaa cagttatatg ttcaaaaggg aacctcctga
                                                                      360
gggctgtgaa agggtcaaag tctttgagga atgctcgtaa gtatcccttc caccatccgc
                                                                       420
cennggngga accececaat ggggggcaaa caaggnnggg gggggegegg tttaaacaac
                                                                       480
ccacgan
                                                                       487
     <210> 836
     <211> 611
     <212> DNA
     <213> Homo sapiens
     <400> 836
tgatgetgee tgetgggeee ggggggetgt ettecaetae tteetgetet gtgeetteae
                                                                       60
ctggatgggc cttgaagect tecaceteta cetgeteget gteagggtet teaacaceta
                                                                      120
cttcgggcac tacttcctga agctgagcct ggtgggctgg ggcctgcccg ccctgatggt
                                                                      180
categgeact gggagtgeca acagetaegg cetetacace ateegtgata gggagaaceg
                                                                      240
caectetetg gagetatget ggtteegtga agggacaace atgtaegeee tetatateae
                                                                      300
cgtccacggc tacttcctca tcaccttcct ctttggcatg gtggtcctgg ccctggtggt
                                                                      360
ctggaagatc ttcaccctgt cccgtgctac agcggtcaag gagcggggga agaaccggaa
                                                                      420
gaaggtgctc accetgctgg gcctctcgag cctggtgggt gtgacatggg ggttggccat
                                                                      480
cttcaccccg ttqqqcctct ccaccqtcta catctttqca cttttcaact ccttqcaaqq
                                                                      540
tgtetteate tgetgetggt teaceatect ttaceteeca agteagagea ceacagtete
                                                                      600
ctcttctact g
                                                                      611
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<212> DNA <213> Homo sapiens

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PCT/US01/02687

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cattacetgt tetactgece aagaaaatga actaatteet teeataatea ggggaagage
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cctaagcata tattctcgac ccctgccctg gatcatctat ggagtctttg ccatcctctc
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tectetactg gattetegtg aagacettet teagagagat tteggtgteg caccaggage
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gtatececaa agataageeg gteatgetgg tgtgtgetee geatgeeaae eagtttgtgg
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acggaatggt catttcaacc catctggacc gcaaggtgta ctttgtgggt gcggcctcga
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gtttccgcaa gtacaaggtg gtgggtctct tcatgaagct gatggcgtcc atcatttcgg
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gggagcgtca ccaggacgtg aaaaaagtgc tgaccggaat ggcgacggag aag
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gaggcactcc ggcgggcatg cttgatcaga agaaagggaa gtttgcttgg tttagtcact
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taccagactg aatgggaagg tgtctctctt qatqqcttgt gccgcagtaq ttctqtqtgt
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gtgcatatat gtgtatgtat atatgttgtg tgggtgtgtg tgtttgtgaa gggatgqcaa
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tocagcatgo cottatgoco gtoattocca agggotocto ogtgggtaca ggaaccaact
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tgcacagtga gtctgccagt tttctaacca gcccaaagct catcatgtgc ctaccccttg
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cttagtaaac atgtgccctg cccttcctaa gaacagaatg aagaaagact tcttggggat
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gacttagttt attgtagaat gtagggtgtc taaataaaag ctgctgcaca tactaagatg
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tttagtttgt taaattatcc tattttatta tagctatttt atattaaaat ttaacaaatt
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caggtaaaca ctatgtatta ggcaattaca gacctctaga gctattggtt ataaaagaag
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aagtaatctg geegggetea gtggeteaca cetetaaace cagetettag ggaggeeaag
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gtaggtggag gacttgagcc aagaggtcta gtccagcctg ggcaacatgg ggaaaccctq
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tetetacaaa aaatacaaaa attagecagg catagtgtca tgegeetgtg gteecageta
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ctctggaggc tgaagcagga aaattgcttg agcttaagaa gcataagttg cagtggggcc
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aagatcaagc ccactggatt tctgccttgg ccaagaaaag aagagggagg agggggaaga
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gccc
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cccagcaaga ggagcagtcc ageggcatga ccattttctt cagectcctt gtcctagcta
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tetgeateat attggtgeat ttactgatee gatacagatt acatttettg ecagagagtg
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ttggttccat caccetgttt getgtttttg gaacggcaat etcegetttt gtagtaggtg
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gaggaattta ttttctqqqt caqqctcacq taatctctaa actcaacatq ac
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cccctttgca gacccagtag gtgaatccaa ttacgtagag caggggactg tggagctgtg
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ttgtgagcag cacccaggtg atgccccatg gcagcatgtc ccacattcct tccatcttt
                                                                   240
aaaaaaaatt tttctcggtg gcagtcttgc tctgtcgcct aggctggggt acagtggtgc
                                                                   300
aateteaget cacegeagee teaaceteee gggtteaage aateeteeca cettggeete
                                                                   360
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                                                                   420
ggccggacga cgtcgt
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aaccgtccag cttatatcca gacagggtct caagccaccc aggctggagt gcagtggcac
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aattatggct cactgtagcc tcaccttcct gggatcaagc aatcttcttt cttcagcctc
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cagaggagct gggaccacag atcctt
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agacttaaga atgctggtga agagtgcaag agcctcaggg gccagcttga ggagcaaggc
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cggcagctgc aggctgctga ggaagctgtg gagaagctga aggccaccca agcagacatg
                                                                   240
ggagagaagt tgagctgcac tagcaaccat cttgcagagt gccaggcggc catgctgagg
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420
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517

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cgtggggatg agtgacggaa acccagaget cetgtcaace agccagacet acaacggeca
                                                                      180
gagogagaac aacgaagact atgagatece eccgataaca ceteceaace teceggagee
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atcoctcotg cacetggggg accaegaage cagetaceae tegetgtgee acggeeteae
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coccaacggt etgetecetg cetactecta teaggecatg gaceteceag ceateatggt
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tecteatgaa geececaete egtecaetae tgeetgacae ceaegaageg ageagtttee
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tgtccaagcc atgctctggg gctactgtgt ccacctcaaa ggcatatgag ggaccctctt
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ccagaaagaa caagtcctca gggactgtgg gaatctggaa aagccagtcc agggcagcaa
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cgacctcacc gagcaggaga tacggaccct ggagcattgt cccaattcct tcttctaatg
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aagaaatacg cttagttgat gatgcgtttg gaaaaatttg tcacatggtc agtgatggct
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cttgggtggt tcgtgttcag gcagcaaaac tgttgggctc tatggagcaa gtcagttctc
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atttcttgga gcagaccctt gacaagaagc atgtcagatc tgaggaggaa acgtactgca
                                                                      360
catgagegtg ccaaggaact ttacagtteg ggggagtttt ccagtggeag aaagtgggga
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gatgatgctc ccaaggaag
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     <210> 859
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     <213> Homo sapiens
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 $\langle 223 \rangle$  n = a,t,c or g

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                                                                      960
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aagggcaaaa ttctcagcga acagaaggcg atgatcaatg ctatggattc caagatcaga
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ageggateac ceggaagtee tgeaacetga eggtggagae gggcaacete aeggagetet
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tgagatcgat tcagatgatt gttcatccta cccccacgcc aatccgtgca ggcgatggcc
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accgcaccta ccaaatggtg agtgtatgtt gcaccctggt ctttctctgc ctaggaagcc
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tcttccctcc caattagatc tgagttgctt taagaaaaaa aggggacatg ttatgtaaat
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agetggette cacetggace tettetgtgt ggetgtgetg atgetactca cateageget
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tggactgcct tggtatgtct cagccactgt catctccctg gctcacatgg acagtcttcg
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ggagctggac accaaaggtg agcctggcag gggaggagcg tggggagacc tgtcagcccg
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gatcccccc cacaacctta tttcttagcc ccctcctgag ggtagagtcg cgtggagcta
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accgcacccc tagggaccac ccggaggett ccccaccgct gacacccccg cgggccccct
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ctctgagccc tggtggcttg ggtttagaca gtccccagtg ttgcctgtgt taggggagga
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gacagagttt gtttacttgt gggggactga ggaagtgcca ctaggatgcc ttgaaataca
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tcaagagaag gtctgaaaac tgaaaagaga gtcctctaag gatccagggt gtcccccac
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     <212> DNA
     <213> Homo sapiens
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     <221> misc_feature
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tgacatcctc atcctatgga ccctagagtc tggccactcc aggaacctga cctgctctgt
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geocegecce tgtaageata gaacaccece catgatetee tggagtgggg ceteegagae
                                                                     300
```

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ctccccgggc cccactactg cccgttcctc agtgctcacc cttaccccaa agccccagga
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     <211> 2161
     <212> DNA
     <213> Homo sapiens
     <400> 865
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tgatctaatc ccgggagact tgagggacct ccgagtagaa cctgttacaa ctagtgttgc
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aacaggggac tattcaattt tgatgaatgt aagctgggta ctccgggcag atgccagcat
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ccgcttgttg aaggccacca agatttgtgt gacggcaaa agcaacttcc agtcctacag
                                                                      300
ctgtgtgagg tgcaattaca cagaggcctt ccagactcag accagaccct ctggtggtaa
                                                                      360
atggacattt teetacateg getteeetgt agagetgaae acagtetatt teattgggge
                                                                      420
ccataatatt cctaatgcaa atatgaatga agatggccct tccatgtctg tgaatttcac
                                                                      480
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cctgtgggat ccgaacatca ctgcttgtaa gaagaatgag gagacagtag aagtgaactt
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cacaaccact cccctgggaa acagatacat ggctcttatc caacacaqca ctatcatcqq
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gttttctcag gtgtttgagc cacaccagaa gaaacaaacg cgagcttcag tggtgattcc
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caagaagact teetttteta ceaceacact actqcccccc attaaqqtte ttqtqqttta
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caattacagg gaaaaaacgt gtgatgatcc tgaagcttac tatgcagcct acaaacagcc
                                                                     1620
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                                                                     1680
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                                                                     1920
cttaagtgaa aaaccttcta ttacatgcaa aaaatcattg tttttaagat aacaaaagta
                                                                     1980
gggaataaac aagctgaacc cacttttact ggaccaaatg atctattata tgtgtaacca
                                                                     2040
cttgtatgat ttggtatttg cataagacct tccctctaca aactagattc atatcttgat
                                                                     2100
tettgtacag gtgcetttta acatgaacaa caaaatacee acaaacttgt etaettttge
                                                                     2160
                                                                     2161
     <210> 866
     <211> 505
     <212> DNA
     <213> Homo sapiens
     <220>
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                                                                        60
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                                                                       120
catgtacatt gcagtcatac tggagaattt tagtgttgcc actgaagaaa gtactgaacc
                                                                       180
totgagtgag gatgactttg agatgttota tgaggtttgg qaqaaqtttq atcocqatqc
                                                                       240
gacccagttt atagagttct ctaaactctc tgattttgca gctgccctgg atcctcctct
                                                                       300
teteatagea aaacceaaca aagteeaget cattgeeatg gatetgeeca tggttagtgg
                                                                       360
tgaccggatc cattgtcttg acatcttatt tgcttttaca aagcgtgttt tgggtgagag
                                                                       420
tggggagatg gattctcttc gttcacagat ggaagaaagg ttcatgtctg caaatccttc
                                                                       480
caaagtgtcc tatgaaccca tcaca
                                                                       505
     <210> 867
     <211> 608
     <212> DNA
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gcagetetga acceeaaage ggeteetetg aatteeeagt tteaagttee actetgteee
                                                                       120
tgctgggcat ctcgagatat gggaaacagg gctgttataa ttgccagaca gctgagttct
                                                                       180
gtacatacct tgatttgcaa ttttttttgg ctgcttctca ggacaactgg gggagattta
                                                                       240
qattccttaa aatgcagtta tgaatctatt ggcctcaact ctatttctac ccatgaattc
                                                                       300
atttgtactt ggcaaagacg acttaatttc tcatttgtta tgtcatttaa acctctcttt
                                                                       360
agageetete eteaetetta eetgttaata ateggaagte agetacatga aacgtteaat
                                                                       420
ttgggttcca tctcctctga agaaaaatgc agttaaaaaa aaaataagag gtttggccag
                                                                       480
ccgcagtggc tcacacctgt aatcccagca ttttgggagg ccgaggcagt cagatcacct
                                                                       540
gggggcggga gttcgggaac cggcctggcc caacacagga gaaaccccgt cttatactaa
                                                                       600
acaatata
                                                                       608
     <210> 868
     <211> 772
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc_feature
     <222> (1)...(772)
     <223> n = a,t,c or g
     <400> 868
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ctctggccaa ggtggctggc agacaagatg ctgcccctcc tgggggcagt gctgcttcag
                                                                      120
aagagagaga agaggggccc tctgtggagg cactggcggc gggaaaccta cccatactat
                                                                      180
gacctccagg tgaaggtgct gagggccaca aacatccggg gcacagacct gctgtccaaa
                                                                      240
geogaetget atgtgeaact gtggetgeee acggegteee caagecetge ccagactagg
                                                                      300
atagtggcca actgcagtga ccccgagtgg aatgagacct tccactacca gatccatggt
                                                                      360
getgtgaaga acgtcctgga getcaccete tatgacaagg acatcctggg cagcqaccaq
                                                                      420
ctctctctgc tcctgtttga cctgagaagc ctcaagtgtg gccaacctca caaacacacc
                                                                       480
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ttcccactca accaccagga ttcacaagag ctgcaggtgg aatttgttct ggagaagagc
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caggagectg catctgaagt catcaccaac ggggttetgg gggeteaccc ctggetgaga
                                                                      600
atgaagggta tgattttggg agaggggaga gccccacggc aacagcacgg ccaatcttgg
                                                                      660
qaqqqqqqq tqqqaccctc cccctctcc ccnnqnanaa acaccqqaqq qaagatagtt
                                                                      720
qqqttttqgg aaqaaatggc gaatgggacc ggcgccccac cccgcccccc ct
                                                                      772
    <210> 869
    <211> 704
    <212> DNA
    <213> Homo sapiens
    <220>
    <221> misc_feature
    <222> (1)...(704)
    <223> n = a,t,c or g
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                                                                      60
tgagccatgg tgtcttctgc cgtcaaaggg cgaccctaac tgcatcctgc tggagtcgag
                                                                      120
aaaaccaqqt aqactqqaaa ggatqtqtct acaqtaactg aaacacatca ctgcgttttg
                                                                      180
ttacagtcaa tgatagggca gatctgagtt ccagagcacg gctcacagac ctttccttgc
                                                                      240
atcagtctgt gccgaagtcn nnnnnnnnc ttttttcttt ttttgcccac attacatcac
                                                                      300
ttcataattt accacctacg tagcatgact gtatatttgg aatcatttct tcacaagttt
                                                                      360
tagaccatat taaaggaaca ctggcagaac cctgtttgat ttccctttcg tctgttcccc
                                                                      420
tacattgccc tcctggcccc cttgaggaac tagatgagcg attagaactg gccagaggtc
                                                                      480
cttggaggaa caacagcgaa acagaagcat tagtagcatt gtcctcccca gtctaacact
                                                                      540
tqtcqqaccc ctgatgagca gacttccctg tgqqgtgttc atatccccat gccccgctca
                                                                      600
gtgggcttca tgtctgagtc atatttgcct gctttccttt gaggtggtgg gcgccaaggt
                                                                      660
tgtgacaaat gcccggagtc ctggagctcg ctgttacggt tttg
                                                                      704
     <210> 870
     <211> 389
     <212> DNA
     <213> Homo sapiens
     <400> 870
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gtetgtaetg egtttatgag etgtgaeaet egeegtgaag gtetgeaget teaeteetga
                                                                      120
accaqcqaqa qqaqqaaccc accaqaaqqa qqaaaacqcq qaacacatct qaatatcaqa
                                                                      180
aggaacaaac tecagacaeg cegeetttaa gaactgtaac agteacegeg agggteegtg
                                                                      240
gtttcattct tgaagtaagt gagaccaaga acctgccaat ttcagacaca atggagagcg
                                                                      300
ccagtcctgc tgcggggcca tacatctatt taatttcctc tcatcttccc cccggttccg
                                                                      360
agaggaaggt gctttcacct gcactgttc
                                                                      389
     <210> 871
     <211> 643
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc_feature
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404

```
<222> (1)...(643)
     <223> n = a,t,c or g
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aaggagtacg gacgggagtc agaggcagag cgagggtgtg tggagggccg gcggggaccg
                                                                    120
ccgggagcgc gcggatgtcg gtgttcctgg ggccagggat gccctctgca tctttattag
                                                                    180
taaatettet tteagettta eteateetat ttgtgtttgg agaaacagaa ataagattta
                                                                    240
ctggacaaac tgaatttgtt gttaatgaaa caagtacaac agttattcgt cttatcattg
                                                                    300
aaaggatagg agagccagca aatgttactg caattgtatc gctgtatgga gaggacgctg
                                                                    360
420
tgtacatagc agtatgtgat gatgacttac cagagcctga cgaaactttt atttttcact
                                                                    480
taacattaca gaaaccttca gcaaatgtga agcttggatg gccaaggact gttactgtga
                                                                    540
caatattatc aaatggacaa atggcatttt gggaatttat tttcatttta aatattggcc
                                                                    600
ttccccctcc aattccgcca agtggaagnt tgaaagcccc cct
                                                                    643
     <210> 872
     <211> 498
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc_feature
     <222> (1) . . . (498)
     <223> n = a,t,c or g
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cgcggcccgc catggatgtg gaggaggcgt tccaggcggt gggggagatg ggcatctacc
                                                                    120
agatgtactt gtgcttcctg ctggccgtgc tgctgcagct ctacgtggcc acggaggcca
                                                                    180
tecteattge actggttggg gecacgecat cetaceactg ggacetggea gageteetge
                                                                    240
caaatcagag ccacggtaac cagtcagctg gtgaagacca ggcctttggg gactggctcc
                                                                    300
tgacagccaa cggcagtgag atccataagc acgtgcattt cagcagcagc ttcacctcta
                                                                    360
tegeetegga gtggttttta attgeeaaca gateetacaa agteagtgea geaagetett
                                                                    420
ttttcttcag tggtgtattt gttggagtta tctcttttgg tcagctttca gatcgcttcg
                                                                    480
gaaggaaaaa agtctatc
                                                                    498
     <210> 873
     <211> 404
     <212> DNA
     <213> Homo sapiens
     <400> 873
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ggattccctc caggtgacga tgctctggtt ctccggcgtc ggggctctgg ctgagcgtta
                                                                   120
etgeegeege tegeetggga ttacgtgetg egtettgetg ctactcaatt getegggggt
                                                                   180
ecceatgict etggetteet cettetigae aggitetgit geaaaatgig aaaatgaagg
                                                                   240
tgaagtcctc cagattccat ttatcacaga caacccttgc ataatgtgtg tctgcttgaa
                                                                   300
caaggaagtg acatgtaaga gagagaagtg ccccgtgctg tcccgagact gtgccctggc
                                                                   360
catcaagcag aggggagcct gttgtgaaca gtgcaaaggt tgca
```

```
<210> 874
     <211> 435
     <212> DNA
    <213> Homo sapiens
     <400> 874
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gcatccatcg gcagctctgt ggtgagggac agggtgattg gagccaaaag gttgcagcac
                                                                      120
ataagtggcc ttggctacag gatgtactgg ttcacaaact tcctatatga catgctcttt
                                                                      180
tacttggttt ccgtctgcct gtgtgttgcc gttattgtcg ccttccagtt aacagctttt
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actttccgca agaacttggc agccacggcc ctcctgctgt cacttttcgg atatgcaact
                                                                      300
cttccatgga tgtacctgat gtccagaatc ttttccagtt cggacgtggc tttcatttcc
                                                                      360
tatgtctcac taaacttcat ctttggcctt tgtaccatgc tcataaccat tatgccccgg
                                                                      420
ttgctagcca tcatc
                                                                      435
     <210> 875
     <211> 703
     <212> DNA
    <213> Homo sapiens
     <400> 875
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cctgcaccat ttggacatca tccacagacc cctttcgtaa gtgctggatg gcccctgaag
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ccctcaactt ctccttcagc cataaatcag acatctggtc cctgggctgc atcattctgg
                                                                      180
acatgaccag ctgctccttc atggatggca cagaagccat gcatctgcgg aagtccctcc
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gccagagccc aggcagcctg aaggccgtcc tgaagacaat ggaggagaag cagatcccgg
                                                                      300
atgtggaaac cttcaggaat cttctgccct tgatgctcca gatcgacccc tcgqatcgaa
                                                                      360
taacgataaa gtgagctcag ggtcggggtt tattttaacc tgtggattta tctttcaaca
                                                                      420
tetetecace etaatacaag cacagetagt tggetttgta acgeeteaaa gaacteeate
                                                                      480
acagatgece tgattatece tgeacagetg ggetttgece agttetgget eteccaaace
                                                                      540
gtgctgcggc gagtaatccc gaatgtacgg tggagtgagc agactgaccc ccaggaggca
                                                                      600
caggaggcgt agccccagg acccacgaca cttttagggt tccagaaaaa agttttcatt
                                                                      660
caacataaaa aaaaaaaaat tootaaagac aaaaaaaaaa aaa
                                                                      703
    <210> 876
    <211> 429
    <212> DNA
    <213> Homo sapiens
    <400> 876
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aaactgaaag atcccctaat ttgatgagtg agagggtcga gcggaactgg agcacqqqcq
                                                                      120
getggetget ggeactgtge etggeetgge tgtggaeeca eetgaeettg getgeeetge
                                                                     180
agceteceae tgecaeagtg ettgtgeage agggeaeetg egaggtgatt geggeteaee
                                                                     240
getgetgeaa eeggaacege ategaggage geteecagae ggtgaaatge teetgttttt
                                                                     300
etggecaggt ggeeggeace aegegggeaa ageeeteetg egtggaegae etgetettgg
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etgeceactg tgetegtaga gaccetagag etgeacteeg ceteetgett ecacageete
                                                                     420
catcqtcct
                                                                     429
```

```
<210> 877
<211> 1140
<212> DNA
<213> Homo sapiens
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<400> 877 cgtcactagc agtttctgga gctacttgcc aaggctgagt gtgagctgag cctgcccac caccaagatg atcetgaget tgetgtteag cettggggge cecetggget gggggetget 120 gggggcatgg gcccaggctt ccagtactag cctctctgat ctgcagagct ccaggacacc 180 tggggtctgg aaggcagagg ctgaggacac cggcaaggac cccgttggac gtaactggtg 240 cccctaccca atgtccaage tggtcacctt actagetett tgcaaaacag agaaatteet 300 catccactcg cagcagccgt gtccgcaggg agctccagac tgccagaaag tcaaagtcat 360 gtaccgcatg gcccacaagc cagtgtacca ggtcaagcag aaggtgctga cctctttggc 420 ctggaggtgc tgccctggct acacgggccc caactgcgag caccacgatt ccatggcaat 480 ccctgagcct gcagatcctg gtgacagcca ccaggaacct caggatggac cagtcagctt 540 caaacctggc caccttgctg cagtgatcaa tgaggttgag gtgcaacagg aacagcagga 600 acatetgetg ggagatetee agaatgatgt geacegggtg geagaeagee tgeeaggeet 660 gtggaaagcc ctgcctggta acctcacagc tgcagtgatg gaagcaaatc aaacagggca 720 cgagttccct gatagatcct tggagcaggt gctgctaccc cacgtggaca ccttcctaca 780 agtgcatttc agccccatct ggaggagctt taaccaaagc ctgcacagcc ttacccaggc 840 cataagaaac ctgtctcttg acgtggaggc caaccgccag gccatctcca gagtccagga 900 cagtgccgtg gccagggctg acttccagga gcttggtgcc aaatttgagg ccaaggtcca 960 ggagaacact cagagagtgg gtcagctgcg acaggacgtg gaggaccgcc tgcacgccca 1020 gcactttacc etgcaccgct cgatctcaga gctccaagcc gatgtggaca ccaaattgaa 1080 gaggetgeac aaggeteagg aggeeecagg gaceaatgge agtetggtgt tggaacgeet 1140

<210> 878 <211> 1139 <212> DNA <213> Homo sapiens

<400> 878

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₹210> 879

```
<211> 478
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc feature
     <222> (1)...(478)
     <223> n = a,t,c or g
     <400> 879
ggtcacgcaa gcggcnncnn nttttgagac ctttgatagc gtgtaggaan ncccaggcca
                                                                       60
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                                                                      120
aatatttqcc cacqqcctcc cagqcccaqq cccatqccac ctgqqccccq qcatctqttt
                                                                      180
gaggatetge caatgtgete ttaactgagg acgaaggaag aacacettte tatgagtett
gcaaagatta cctccttcag gccacaaata tttgagtgca cactacgtgc caggcactgt
                                                                      300
gcagggctgc aggcatagag acagaatgta atctatctgg gccttggacc ccatagggag
                                                                      360
aggggaccac tcaggtccat acttcctttg gacttggggc tttggccttg ggaggggcgg
                                                                      420
aggtggcgtg gcaagatgaa aaagacatcc tgcccccatc cacttgggca gagcttct
                                                                      478
     <210> 880
     <211> 546
     <212> DNA
     <213> Homo sapiens
     <400> 880
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660

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1440

1500

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1200

1260

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ccttgggcct gggctttggt ggtgtcattg ccttctccag ctacaataag caggacaaca
                                                                      240
actgecactt egatgeegee etggtgteet teateaactt etteaegtea gtgttggeea
                                                                      300
ccctcgtggt gtttgctgtg ctgggcttca aggccaacat catgaatgag aagtgtgtgg
                                                                      360
tcgagaatgc tgagaaaatc ctagggtacc gtgtatt
                                                                      397
     <210> 894
     <211> 380
     <212> DNA
     <213> Homo sapiens
     <400> 894
eggecaccet gecacteact etcategtea teettgagaa categetgtg geetggattt
                                                                      60
atggaaccaa gaagttcatg caggagctga cggagatgct gggcttccgc ccctaccgct
                                                                      120
tctatttcta catgtggaag ttcgtgtctc ctctatgcat ggctgtgctc accacagcca
                                                                      180
gcatcatcca gctgggggtc acgccccgg gctacagcgc ctggatcaag gaggaggctg
                                                                      240
ccgagcgcta cctgtatttc cccaactggg ccatggcacc cctgatcacc ctcatcgtcg
                                                                      300
tggcgacgct gcccatccct gtggtgttcg tcctgcggca cttccaccta atctgtgatg
                                                                      360
                                                                      380
gctccaacac cccatgtatt
     <210> 895
     <211> 389
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc feature
     <222> (1)...(389)
     <223> n = a,t,c or g
ncatgaagat gtttgtggct catgggttct atgctgccaa attcgtagtg gccattgggt
                                                                       60
eggttgeagg actgacagte agettgetgg ggteettett eeegatgeeg agggteattt
                                                                      120
atgccatggc tggtgacggg ctccttttca ggttcctggc tcacgtcagc tcctacacag
                                                                      180
agacaccagt ggtggcctgc atcgtgtcgg ggttcctggc agcgctcctc gcactgttgg
                                                                      240
tcagcttgag agacctgata gagatgatgt ctatcggcac gctcctggcc tacaccttgg
                                                                      300
tetetgtetg tgtettgete ettegaeace accetgagag tgaeattgat ggttttgtea
                                                                      360
agttcttgtc tgaggagcac acgtgtagt
                                                                      389
```

```
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     <211> 415
     <212> DNA
     <213> Homo sapiens
     <400> 896
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acacctacat tctgttaaac aaactgggac ctgtgccctt tgaagggtta gaagagagcc
                                                                      120
caaatgggcc aaagatgggc ctcctgatga tgattctagg ccaaatattc ctgaatggca
                                                                      180
accaagccaa ggaggetgag atttgggaaa tgetetggag gatgggggtg cagegggaaa
                                                                      240
ggaggettte catttttggg aacccaaaga gacttetgte tgtggagttt gtatggeage
                                                                      300
gttacttaga ctacaggcca gtaactgact gtaaaccagt ggagtatgag tttttctggg
                                                                      360
gcccaagatc ccacctagaa accaccaaga tgaaaattct gaagttcatg gcgaa
                                                                      415
     <210> 897
     <211> 428
     <212> DNA
     <213> Homo sapiens
     <400> 897
aagctcggag ctccagggaa ctggagatca tcctcaacca tcgagatgac cacagtgaag
                                                                       60
agettgacce teagaagtae catgacetgg ecaagttgaa ggtggeaate aaataceace
                                                                      120
agaaagagtt tgttgctcag cccaactgcc aacagttgct tgccaccctg tggtatgatg
                                                                      180
getteeetgg atggeggegg aaacaetggg tagteaaget tetaacetge atgaceattg
                                                                      240
ggttcctgtt tcccatgctg tctatagcct acctgatctc acccaggage aaccttgggc
                                                                      300
tgttcatcaa gaaacccttt atcaagttta tctgccacac agcatcctat ttgaccttcc
                                                                      360
tototatgot totootggot totoagoaca ttgtcaggac agacettcat gtacaggggo
                                                                      420
cctgtatt
                                                                      428
     <210> 898
     <211> 444
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc feature
     <222> (1)...(444)
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     <400> 898
ncttacaatg cacaatatct gcttcacatc cttgcccatc ctggcctata gtctactgga
                                                                       60
acagcacatc aacattgaca ctctgacctc agatccccga ttgtatatga aaatttctgg
                                                                      120
caatgecatg ctacagttgg gccccttctt atattggaca tttctggctg cctttgaagg
                                                                      180
gacagtgttc ttctttggga cttactttct ttttcagact gcatccctag aagaaaatgg
                                                                      240
aaaqqtatac qqaaactgga cttttggaac cattgttttt acagtcttag tattcactgt
                                                                      300
aaccetqaaq ettgeettgg ataccegatt etggaegtgg ataaatcaet ttgtgatttg
                                                                      360
gggttcttta gccttctatg tatttttctc attcttctgg ggaggaatta tttggccttt
                                                                      420
tctcaagcaa cagagaatgg cgaa
                                                                      444
```

```
<210> 899
     <211> 436
     <212> DNA
     <213> Homo sapiens
     <400> 899
gggagagag aacttcacat gcacgcaggg tggcaaggat tttactgcca gctcagacct
                                                                        60
tetecageaa caggtettaa acagtgggtg gaagetgtac agggatacce aggatgggga
                                                                       120
agcettteaa ggtgaacaga atgattteaa eteeageeaa ggtgggaaag aettttgeea
                                                                       180
ccaacatggg ctgtttgagc accaaaaaac ccataatggg gagaggcctt atgagttcag
                                                                       240
tgaatgtggg gaattgttta ggtacaactc caaccttatt aaatatcagc aaaatcatgc
                                                                       300
tggagaaagg ccttatgagg gcactgaata tggaaagacc tttattagaa agtccaacct
                                                                       360
agttcagcac cagaaaattc acagtgaagg ctttctttca aaaaggtctg accccattga
                                                                       420
acatcaggag tgtatt
                                                                       436
     <210> 900
     <211> 466
     <212> DNA
     <213> Homo sapiens
     <220>
     <221> misc_feature
     <222> (1)...(466)
     \langle 223 \rangle n = a,t,c or g
     <400> 900
agtacgagtt acgtgcggct ganccgcacg gcctatgggc agattggaat gatccaggcc
                                                                       60
ctgggaggct tctttactta ctttgtgatt ctggctgaga acggcttcct cccaattcac
                                                                       120
ctgttgggcc tccgagagga ctgggatgac cgctggatca acgatgtgga agacagctac
                                                                       180
gggcagcagt ggacctatga gcagaggaaa atcgtggagt tcacctgcca cacaqccttc
                                                                       240
ttcgtcagta tcgtgggggt gcagtgggcc gacttggtca tctgtaagac caggaggaat
                                                                       300
tcggtcttcc agccggggat gaagaacaag atcttgatat ttggcctctt tgaagagaca
gccctggctg ctttcctttc ctactgccct ggaatgggtg ttgctcttaa gatgtatccc
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ctcaaaccta cctggagggt ctgtgccttc ccctactctc ttctca
                                                                       466
     <210> 901
     <211> 412
     <212> DNA
     <213> Homo sapiens
     <400> 901
caagatetgg ateggeecea atgatgggat caeceagttt.gataacatec tttttgetgt
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getgaetgte ttecagtgeg tececatgga agggtggtte getgtgetgt caactgecaa
                                                                       120
tgatgtetta ggageceeet ggaattgget gtaetteate eeceteetea teattggage
                                                                       180
ettetttgtt cecaccetag teetgggagt gettteeggg gattttgcca aagagagaga
                                                                       240
gagagtggag acccgaaggg ctttcatgaa gctgcggcgc cagcagcaga ttgagcgtga
                                                                       300
gctgaatggc taccgtgtct ggatagccaa agcagaggaa gtcatgctcg ctgaagaaaa
                                                                       360
tttgtatccc agtcacgcac ggccagtgaa tccgtaatca tggtcataga cc
                                                                       412
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```
<210> 902
    <211> 1334
    <212> DNA
     <213> Homo sapiens
    <400> 902
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tetggaggaa gtgctaette etgggeateg acegggaeat egacaccete ateetgaaag
                                                                      120
gtattgcgca gcgatgcacg gccatcaagt accacttttc tcagcccatc cgcttgcgaa
                                                                      180
acattccttt taatttaacc aagaccatac agcaagatga gtggcacctg cttcatttaa
                                                                      240
gaagaatcac tgetggette eteggeatgg cegtageegt cettetetge ggetgeattg
                                                                      300
tggccacagt cagtttette tgggaggaga gettgaceca geacgtgget ggacteetgt
                                                                      360
tcctcatgac agggatattt tgcaccattt ccctctgtac ttatgccgcc agtatctcgt
                                                                      420
atgatttgaa ccggctccca aagctaattt atagcctgcc tgctgatgtg gaacatggtt
                                                                      480
acagotggto catcittigo gootggtgca gittaggott tattgtggca gotggaggto
                                                                      540
tetgeatege ttateegttt attageegga eeaagattge acagetaaag tetggeagag
                                                                      600
actecaeggt atgactgtee teactgggee tgtecaeagt gegagegaet eetgagggga
                                                                      660
acagegegga gtteaggagt ceaageacaa ageggtettt tacattecaa cetqttqcet
                                                                      720
gccagccctt tctggattac tgatagaaaa tcatgcaaaa cctcccaacc tttctaagga
                                                                      780
caagactact gtggattcaa gtgctttaat gactatttat gcgttgactg tgagaatagg
                                                                      840
gagcagtgcc atgggacatt tctaggtgta gagaaagaag aaactgcaat ggaaaaattt
                                                                      900
gtatgatttc catttatttc agaaagtttg tatgtaacaa ttacccqaga qtcatttcta
                                                                      960
cttgcaaaag gattcgtaac aaagcgagta taattttctt gtcattgtat catqcttgtt
                                                                     1020
aaattttaat gcagcatctt cagaacttgt cctgatggtg tcttattgtg tcagcaccaa
                                                                     1080
atatttgtgc attatttgtg gacgttcctt gtcacaggaa gattcttctt ctgttgcctt
                                                                     1140
attgtttttt ttttttaag tetettetet gtetttgtae tggaategaa atcataagat
                                                                     1200
aaacagatca aacgtgctta agagctaact cgtgacacta tgcagtattg tttgaagacc
                                                                     1260
tgttgttcaa cctctgtctc tttatgttaa ctggatttct gcattaaaag actgcccct
                                                                     1320
tgttaaaaaa aaaa
                                                                     1334
     <210> 903
     <211> 701
     <212> DNA
     <213> Homo sapiens
     <400> 903
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                                                                       60
actectaete acagatgeag teteaagetg gtggaaacaa tactggttea actecaetaa
                                                                      120
gaaaagccca atcttcagct cccaaagtta ggaaaagtgt cagtagtcga atccatgaag
                                                                     180
ccgtgaaagc catcgtgctg tgtcacaacg tgacccccgt gtatgagtct cgggccggcg
                                                                      240
ttactgagga gactgagttc gcagaggctg accaagactt cagtgatgag aatcgcacct
                                                                      300
accaggette cageceggat gaggtegete tggtgeagtg gacagagagt gtgggeetea
                                                                      360
cgctggtcag cagggacctc acctccatgc agctgaagac ccccagtggc caggtcctca
                                                                      420
gettetgeat tetgeagetg tttecettea ceteegagag caageggatg ggegteateg
                                                                      480
tcagggatga atccacggca gaaatcacat tctacatgaa gggcgctgac gtggccatgt
                                                                     540
ctcctatcgt gcagtataat gactggctgg aagaggagtg cggaaacatg gctcgcgaag
                                                                     600
gactgcggac cctcgtggtt gcaaagaagg cgttgacaga ggagcagtac caggactttg
                                                                     660
agageegata caeteaagee aagetgagea tgeacacqaa a
                                                                     701
```

<210> 904 <211> 546 <212> DNA

### <213> Homo sapiens

#### <400> 904 tetteggggg cgteettatg atgetggetg ggaeteetgg geateetgtt etteetggge 60 caggccctca tggccatgct ggtgtacgtg tggagccgcc gcagccctcg ggtgagggtc 120 aacttetteg geetgeteae ttteeaggea eegtteetge ettgggeget eatgggette 180 tegetgetge tgggeaacte catectegtg gacetgetgg ggattgeggt gggecatate 240 tactacttcc tggaggacgt cttccccaac cagcctggga ggcaagaggc tcctgcagac 300 ccctgggctt tcctaaagct gctcctggga tgcccctgca gaagacccca attaacctgc 360 ccctccctga ggaacagcca ggaccccatc tgccacccc gcagcagtga ccccaccca 420 ggggccaggc ctaagaggct tctggcagct tccatcctac ccatgacccc tacttggggc 480 agaaaaaacc catcctaaag gctgggccca tgcaagggcc cacctgaata aacagaatga 540 gctgca 546

<210> 905 <211> 2642 <212> DNA

<213> Homo sapiens

### <400> 905

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2100

gactteetge cagtggacaa etgeetgeag agtgteetgg gecaacgggt ggaceteeet

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gaggactttc agatgaacta tgacctctgg ttagaaaggg aggtcttctc caagcccatt
teetgggaag agetgetgea gtgaggetgt tggttagggg aetgaaatgg agagaaaaga
                                                             2220
tgatctgaag gtacctgtgg gactgtccta gttcattgct gcagtgctcc catccccac
                                                             2280
caggtggcag cacagececa etgtgtette egcagtetgt eetgggettg ggtgageeca
                                                             2340
gettgacete ecettggtte ceagggteet geteegaage agteatetet geetgagate
                                                             2400
cattetteet ttaetteece cacceteete tettggatat ggttggtttt ggeteattte
                                                             2460
2520
aatttcaggg gtcatgctga tgcctctcga gacatacaaa tccttgcttt gtcagcttgc
                                                             2580
aaaggaggag agtttaggat tagggccagg gccagaaagt cggtatcttg gttgtgctct
                                                             2640
                                                             2642
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<210> 906 <211> 2053 <212> DNA <213> Homo sapiens

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900

960

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<212> DNA <213> Homo sapiens

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                                                                     360
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ctgggagttc aagagcagta tggacaatct agtgagaccc tgtctctaca aaacattaaa
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aaaattagcc aggtgtggta gtacgtacct gtggtcccag ttattccaga ggctgaggat
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<210> 945 <211> 2127 <212> DNA

<213> Homo sapiens

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gagttagtaa ttgctccct gttccttcac ctccccactt tggagctcag atttgttttt
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ctctgttacc caggetggag tgcagtggtg tgatcatage tcactacage cttgaactee
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                                                                      780
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gaggeggaca geecegaggg ecceeageat tetecaetgg eagetggact eetgaagaag
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cattccagca agettttgc gettetetgc acceggeagg cecaetttec tggcaccete
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ttttcggggc cttgctggag cggggagagc tgtttgtggg ccagctgccc tctgaggaga
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                                                                      240
atcacagetg etgeaatege ttgggagage teetgggeea ecceteettt eaggteaagg
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gggggccctc agcctcttgg ccttgaacgg gctgttcatc ttgattcaca aacacaacct
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ggagtaccct gacttctacc ggaagctcta cggcctcttg gacccctctg tctttcacgt
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caagtaccgc gecegettet tecacetgge tgaectette etgteeteet eccaceteee
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gaaaaaaaa aaa
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geatgategg ggeegettet teaceateet ggggetggte tgegegggee agggeggett
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ctgggcttcc atggctgggg caggcgcgct gcggaccccg ggtcccctgc aaggtatgaa
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tgtggaacgg catgagetge tettttagca tgagegetge egettettea ceatectetg
                                                                      300
getggtetge tegggeeacg aeggatteet gggettteat gggtggggea geeegtgtee
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cggccccccg ttccggtgca acactctgga tgcggagggc g
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atccaggaga tcggcgtgct aggccaccga ggataagagg atggtggcac aagcagcaca
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eggeagegea geeggtgegt acteggeeae acceagtece teegceageg ceacceage
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ggcaaaggcc aggatcacca ggaggcctga gaagtaggtc atgttcctcc caatgcactt
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gttgatgggc ttcatgagga aggaggacaa gaagccgctg aggtacatca ccaggggaat
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ggtcgcgatg aa
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     <212> DNA
     <213> Homo sapiens
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                                                                      120
ggacaagtga aattetetga gagecattgg teagtacaat gaatatgaaa tteatgeetg
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caaggtaatt qeetqagett gtttccagtt atgtgqtcac tgatacaaac actacagatt
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ttacctggtt cactatcaat actgttatgc tctagcgctg ggtggaaaga ttgtcagtct
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gctctttggt taaatcatgt attcaggcgg gcgtggtggc tcttgcctgt aatcctagca
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ctttgggagg ccgaggcagg cggatcacct gaggtcagga gttgaagacc agcctggcca
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acatggtgaa acccatgtct actaaaatac
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                                                                      120
tgacceteca ecaagteetg caggtaggne ettgtacteg gteggaggtg agggagagtg
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ggtggctgtt ggaaatgtgc aggtccacag tattctccag ggaggagggc accccctacc
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gaacatatgc accagtggcc teggeccagg ceggetttec eggttttatt eccgtaacce
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tgcageteca accetgettg egececacea teagteagee etegtgeeaa gettggegta
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                                                                     1321
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tcattagtat accaaagtca ctaagaaaaa ctatgacaga atgcctaaag tatcttatgt
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gtgcctcaat gtccaaacaa atctggctta aaatttccaa ctcaagccat ttaatagggt
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caaattcaca totottaaaa tatottaato agaagtcaag acagttgtoo agaaaatgto
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acattattca ttgttatcta ctttttattt ataaacagtg gaaccaaagc cactacttga
                                                                      720
gttatactta aatttttttg ccctgcttta tccacccaaa tttgttttca aaactatact
                                                                      780
caaccaaaac ctatttggca tttattgtca ctaagatgta gcaaagaaaa gagtttgcca
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                                                                    1620
geogaecege egetgeegee geteceeteg egetecatec egtegeeatt caccacagag
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<210> 953 <211> 1205 <212> DNA

<213> Homo sapiens

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<210> 954
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ctctcctttc tctcttcctc cctcctttct atgacttgtc ctctccacac aactcctttt
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cogtition teccetgeet ecceacette titetigaet teccatetty etcectitet
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<212> DNA <213> Homo sapiens

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<213> Homo sapiens

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<211> 1139

<212> DNA

<213> Homo sapiens

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ataattgtat ttgccatgtc tttgtccagt tttggtatta ctctatacat atgtattata
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catacgaaaa agtgaaaaca gaacctggtc catggaactg gaggaacagc agtgtgccga
                                                                      480
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1740

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gttcaggtcg ctggctgggg ctggctgcag ggactgcgac cctcccatcc tcgctgtgcc
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<212> DNA
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<213> Homo sapiens

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tetgetttt aggecaaaga ttetgecetg gtettegtee tetceacace eccaggatet
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qaaaaactcc ccccaqcccc tcattttccc aggccctcta ccccccccg tcccccccc
cttatgaaat geeecetet tegeeectaa atgeettace caetgeeage caeetetgee
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<213> Homo sapiens

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1320

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<210> 966 <211> 617

<212> DNA <213> Homo sapiens

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(213) HOMO Bapichs

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<210> 968 <211> 1495 <212> DNA

<213> Homo sapiens

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gccacaaatg caaatacttg tgcactggga gagcctgctg ccaaatgctg gaggttctcc
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<213> Homo sapiens

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<212> DNA <213> Homo sapiens <400> 970 agttaacagg tacacatgat acatatttca aatggtttga aagtgaatac aatgaaagca 60 agcaggaaga cttgattgga agcaattttt tcttggtttg tttcaagcag tattttttca 120 tgttgactgc actgccaaaa tcatttqtqt tcaaqqtqqt gggtgaatqq tqqtqqcttt 180 ttatttgett ggttttgget tttgctqatg gaaaaaqaca caagtataqt tatqatqcaa 240 atgtttttct tcaagttaat tatattactt ggccagatag tttttcacca gtgccctccc 300 ttcccccaat cctgtgagct gtagccttct gtgcttttgt gttcttataa gaacctcact 360 ggagctggca gtggtggtgt gtgctggtaa tcccagctac acgggaggat cccttgagcc 420 480 aaaaaagacc ctcactggta ataagcaggt gtacttgtga ctaaaaaatat agaaaacaca 540 gtttaataaa gaatctcaca tagattacaa atagaatgaa gaaatgatgt gttagaaaca 600 gttatatatg ttaagggcgc ataaaacaca ccattgttac aacattttgg ctacaattgc 660 agetttetea atetgetgge etttttaaa taagaaaget ttttaaaaaa atgaaccaaa 720 cageteagat ttageggagg acetgaaaat tttaacetee cattetacag geagegtetg 780 gaccttttta aacatggcga cgctttaaat tttctggaac tgtttcgccc caaagctccc 840 gagcctgcca acattacgag ggaac 865 <210> 971 <211> 630 <212> DNA <213> Homo sapiens <400> 971 ttccagcgtg gcggaattcc tgaatagctg ggattacaag gcgtgcacca ccacgcctgg 60 ctaattttgt gtttttagta gagacqqqqt ttctccatqt tqaqqctqqq ctcqaactcc 120 tgacctcagg tgatctgccc gccttggcct cccagagtgc tgggattacc ggcgtgagct 180 acceptecce gccggaacat tegtttttcc categacact ccaaegtcaa ctgttttctc 240 cttatggttt ggcatccaca aagcagcagg aatcttccaa gtactggttc aactactgct 300 tttactaact ccttacccac gttatccttc cccgtctcct ctccctccct actcataccc 360 ttgatatcac ttactatggg acatttgcag ctctcattca aagccatcct ttagataaga 420 cctgaacatg cttaaatttg tttcagagga tctgttgagg atctttccac cagggaatcc 480 agagactgat gtgggcagga gaaggaggac agtttgattc aaatctctaa agactacttg 540 ggaaattatc caggccaaag ttgtcctcct caagggggca aatctcaact gaagagtgcg 600 taacatttat ttgtattgcc cacctgtatt 630 <210> 972 <211> 426 <212> DNA <213> Homo sapiens <400> 972 aattaagttg ctgtctttgt atacagggtc agattgttaa gcgacttgcc catagtcacc 60 tagtaagcaa gttcagttct ccttttctct acagccattt cacagtaaga attacttaat 120 tatgtagttt gactttcagg tacagtggag aagaatttac tgtttttgtt ttgctgctct 180 ccttatagga tgatgtgggc tgctggggca gtagcagcca tgtctagcat cacctttcct 240 gctgtcagtg cacttgtttc acgaactgct gatgctgatc aacagggtga gttgatagga 300 actagogata attatttaaa agtacagaat gttctaatcc tgtgttctgt ctcctatgta 360

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<400> 974

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<210> 975

<211> 2659

<212> DNA

<213> Homo sapiens

## <400> 975

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<400> 976

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<210> 977

<211> 1576

<212> DNA

<213> Homo sapiens

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<210> 978

<211> 1694

<212> DNA

<213> Homo sapiens

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<210> 979 <211> 2203 <212> DNA

<213> Homo sapiens

<400> 979

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2203

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<213> Homo sapiens

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230

<210> 1015

<211> 112 <212> PRT <213> Homo sapiens

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<210> 1019 <211> 188 <212> PRT <213> Homo sapiens

180

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<210> 1021 <211> 136 <212> PRT <213> Homo sapiens

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<400> 1022
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<210> 1023 <211> 186 .<212> PRT <213> Homo sapiens

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<210> 1032 <211> 1764 <212> PRT <213> Homo sapiens

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Gly Asp Gly Asn Gln Tyr Val Arg Glu Ala Ala Asp Asp Cys Ala Lys
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           580
Ser Leu Leu Ala Ala Leu Glu Glu Glu Ser Trp Arg Thr Lys Ala Gly
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Ser Val Glu Leu Leu Gly Ala Met Ala Tyr Cys Ala Pro Lys Gln Leu
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Ser Ser Cys Leu Pro Asn Ile Val Pro Lys Leu Thr Glu Val Leu Thr
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Ile Gly Ser Val Ile Arg Asn Pro Glu Ile Leu Ala Ile Ala Pro Val
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Thr Asp Thr Arg Lys Met Ala Ala Gln Ile Ile Gly Asn Met Tyr Ser
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Leu Thr Asp Gln Lys Asp Leu Ala Pro Tyr Leu Pro Ser Val Thr Pro
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Gly Leu Lys Ala Ser Leu Leu Asp Pro Val Pro Glu Val Arg Thr Val
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Ser Ala Lys Ala Leu Gly Ala Met Val Lys Gly Met Gly Glu Ser Cys
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Phe Glu Asp Leu Leu Pro Trp Leu Met Glu Thr Leu Thr Tyr Glu Gln
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Ala Thr Ala Ser Lys Val Asp Ile Ala Pro His Val Arg Asp Gly Tyr
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Pro Tyr Val Gly Pro Ile Ile Pro Cys Ile Leu Lys Ala Leu Ala Asp
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Ile Ser Met Tyr Ala Glu Thr Ala Ile Ala Leu Leu Pro Gln Leu
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Glu Gln Gly Leu Phe Asp Asp Leu Trp Arg Ile Arg Phe Ser Ser Val
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                                               925
Gln Leu Leu Gly Asp Leu Leu Phe His Ile Ser Gly Val Thr Gly Lys
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                                           940
Met Thr Thr Glu Thr Ala Ser Glu Asp Asp Asn Phe Gly Thr Ala Gln
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Val Leu Ala Gly Leu Tyr Met Gly Arg Ser Asp Thr Gln Leu Val Val
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Arg Gln Ala Ser Leu His Val Trp Lys Ile Val Val Ser Asn Thr Pro
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Arg Thr Leu Arg Glu Ile Leu Pro Thr Leu Phe Gly Leu Leu Gly
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Asp Pro Gly Val Arg Asp Thr Met Leu Gln Ala Leu Arg Phe Val Ile 1490 1495 1500 Gln Gly Ala Gly Ala Lys Val Asp Ala Val Ile Arg Lys Asn Ile Val 1505 1510 . 1515 1520 Ser Leu Leu Ser Met Leu Gly His Asp Glu Asp Asn Thr Arg Ile 1525 1530 Ser Ser Ala Gly Cys Leu Gly Glu Leu Cys Ala Phe Leu Thr Glu Glu 1540 1545 1550 Glu Leu Ser Ala Val Leu Gln Gln Cys Leu Leu Ala Asp Val Ser Gly 1555 1560 1565 Ile Asp Trp Met Val Arg His Gly Arg Ser Leu Ala Leu Ser Val Ala 1575 1580 Val Asn Val Ala Pro Gly Arg Leu Cys Ala Gly Arg Tyr Ser Ser Asp 1585 1590 1595 1600 Val Gln Glu Met Ile Leu Ser Ser Ala Thr Ala Asp Arg Ile Pro Ile 1605 1610 1615 Ala Val Ser Gly Val Arg Gly Met Gly Phe Leu Met Arg His His Ile 1620 1625 1630 Glu Thr Gly Gly Gln Leu Pro Ala Lys Leu Ser Ser Leu Phe Val 1640 1645 Lys Cys Leu Gln Asn Pro Ser Ser Asp Ile Arg Leu Val Ala Glu Lys 1650 1655 1660 Met Ile Trp Trp Ala Asn Lys Asp Pro Leu Pro Pro Leu Asp Pro Gln 1670 1675 1680 Ala Ile Lys Pro Ile Leu Lys Ala Leu Leu Asp Asn Thr Lys Asp Lys 1685 1690 1695 Asn Thr Val Val Arg Ala Tyr Ser Asp Gln Ala Ile Val Asn Leu Leu 1700 1705 1710 Lys Met Arg Gln Gly Glu Glu Val Phe Gln Ser Leu Ser Lys Ile Leu 1715 1720 1725 Asp Val Ala Ser Leu Glu Val Leu Asn Glu Val Asn Arg Arg Ser Leu 1730 1735 1740 Lys Lys Leu Ala Ser Gln Ala Asp Ser Thr Glu Gln Val Asp Asp Thr 1750 1755 Ile Leu Thr \* 1763

<210> 1033 <211> 151 <212> PRT <213> Homo sapiens

85

<400> 1033

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<210> 1034 <211> 149 <212> PRT <213> Ḥomo sapiens

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<210> 1035 <211> 88 <212> PRT <213> Homo sapiens

145 148

<210> 1036 <211> 96 <212> PRT <213> Homo sapiens

<210> 1037 <211> 139 <212> PRT <213> Homo sapiens

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<210> 1039 <211> 286 <212> PRT <213> Homo sapiens

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<210> 1040

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<210> 1042 <211> 415 <212> PRT <213> Homo sapiens

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100
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Thr Ser Val Phe Ala Gly Phe Ala Ile Phe Ser Ile Leu Gly His Met
                  135
                                  140
Ala His Ile Ser Gly Lys Glu Val Ser Gln Val Val Lys Ser Gly Phe
               150
                                155
Asp Leu Ala Phe Ile Ala Tyr Pro Glu Ala Leu Ala Gln Leu Pro Gly
                     170 175
Gly Pro Phe Trp Ser Ile Leu Phe Phe Phe Met Leu Leu Thr Leu Gly
                185
   180
Leu Asp Ser Gln Phe Ala Ser Ile Glu Thr Ile Thr Thr Ile Gln
      195 200 205
Asp Leu Phe Pro Lys Val Met Lys Lys Met Arg Val Pro Ile Thr Leu
                   215
                                   220
Gly Cys Cys Leu Val Leu Phe Leu Leu Gly Leu Val Cys Val Thr Gln
225
       230
                                235
                                     240
Ala Gly Ile Tyr Trp Val His Leu Ile Asp His Phe Cys Ala Gly Trp
             245
                             250
Gly Ile Leu Ile Ala Ala Ile Leu Glu Leu Val Gly Ile Ile Trp Ile
        260
                          265
Tyr Gly Gly Asn Arg Phe Ile Glu Asp Thr Glu Met Met Ile Gly Ala
                     280
                                       285
Lys Arg Trp Ile Phe Trp Leu Trp Trp Arg Ala Cys Trp Phe Val Ile
                  295
                                   300
Thr Pro Ile Leu Leu Ile Ala Ile Phe Ile Trp Ser Leu Val Gln Phe
305 310
                                315
His Arg Pro Asn Tyr Gly Ala Ile Pro Tyr Pro Asp Trp Gly Val Ala
            325
                             330 335
Leu Gly Trp Cys Met Ile Val Phe Cys Ile Ile Trp Ile Pro Ile Met
                          345
Ala Ile Ile Lys Ile Ile Gln Ala Lys Gly Asn Ile Phe Gln Arg Leu
                      360
Ile Ser Cys Cys Arg Pro Ala Ser Asn Trp Gly Pro Tyr Leu Glu Gln
        · 375
                           . 380
His Arg Gly Glu Arg Tyr Lys Asp Met Val Asp Pro Lys Lys Glu Ala
              390 395
Asp His Glu Ile Pro Thr Val Ser Gly Ser Arg Lys Pro Glu *
                            410
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<210> 1043 <211> 48 <212> PRT <213> Homo sapiens

<210> 1044

<211> 146 <212> PRT <213> Homo sapiens

<400> 1044 Met Leu Phe Ser Ser Met Thr Leu Arg Leu Ser Arg Cys Ser Cys Ser 10 Ile Leu Leu Phe Trp Ala Ser Ala Ala Cys Met Phe Pro Ser Ser Arg 2.0 25 Tyr Leu Trp Ser Gly Arg Ser Leu Val Ser Val Glu Gly Ser Asp Arg 40 Phe Ser Ser Ala Val Ser Ser Phe Ser Ser Lys Ala Asn Trp Val Lys Pro Lys Phe Arg Ser Trp Ser Gly Gly Ile Glu Leu Gly Phe Gln Met His Trp Pro Pro Gly Val Gly Pro Arg Tyr Ser Pro Ser Cys His Phe 90 Pro Lys Ser Arg Trp Arg Thr Arg Pro Leu Arg Leu Ser Thr Ala Pro 105 Cys Thr Ser Trp Thr Leu Glu Leu Gln Tyr Leu Ala Leu Gln Lys Val 120 125 Ile Leu Gln Trp Gln Glu Leu Ser Cys Val Phe Arg Met Ser Thr Ser Pro \* 145

<210> 1045 <211> 53 <212> PRT <213> Homo sapiens

<210> 1046 <211> 407 <212> PRT <213> Homo sapiens

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40
Ser Arg His Ala Ala Glu Leu Arg Asp Phe Lys Asn Lys Met Leu Pro
Leu Leu Glu Val Ala Glu Lys Glu Arg Glu Ala Leu Arg Thr Glu Ala
                  70
                                    75
Asp Thr Ile Ser Gly Arg Val Asp Arg Leu Glu Arg Glu Val Asp Tyr
              85
                                 90
Leu Glu Thr Gln Asn Pro Ala Leu Pro Cys Val Glu Phe Asp Glu Lys
         100
                            105
                                            110
Val Thr Gly Gly Pro Gly Thr Lys Gly Lys Gly Arg Arg Asn Glu Lys
                        120
    115
Tyr Asp Met Val Thr Asp Cys Gly Tyr Thr Ile Ser Gln Val Arg Ser
                    135
                                      140
Met Lys Ile Leu Lys Arg Phe Gly Gly Pro Ala Gly Leu Trp Thr Lys
                150
                                  155
Asp Pro Leu Gly Gln Thr Glu Lys Ile Tyr Val Leu Asp Gly Thr Gln
    165
                      170
Asn Asp Thr Ala Phe Val Phe Pro Arg Leu Arg Asp Phe Thr Leu Ala
       180
                  185 190
Met Ala Ala Arg Lys Ala Ser Arg Val Arg Val Pro Phe Pro Trp Val
                      200
                                  205
Gly Thr Gly Gln Leu Val Tyr Gly Gly Phe Leu Tyr Phe Ala Arg Arg
                               220
                     215
Pro Pro Gly Arg Pro Gly Gly Gly Glu Met Glu Asn Thr Leu Gln
225 . 230
                                   235
Leu Ile Lys Phe His Leu Ala Asn Arg Thr Val Val Asp Ser Ser Val
             245
                                250
Phe Pro Ala Glu Gly Leu Ile Pro Pro Tyr Gly Leu Thr Ala Asp Thr
                            265
Tyr Ile Asp Leu Ala Ala Asp Glu Glu Gly Leu Trp Ala Val Tyr Ala
                        280
Thr Arg Glu Asp Asp Arg His Leu Cys Leu Ala Lys Leu Asp Pro Gln
                    295
                                       300
Thr Leu Asp Thr Glu Gln Gln Trp Asp Thr Pro Cys Pro Arg Glu Asn
                 310
                                   315
Ala Glu Ala Ala Phe Val Ile Cys Gly Thr Leu Tyr Val Val Tyr Asn
              325
                                330
Thr Arg Pro Ala Ser Arg Ala Arg Ile Gln Cys Ser Phe Asp Ala Ser
       340
                            345
Gly Thr Leu Thr Pro Glu Arg Ala Ala Leu Pro Tyr Phe Pro Arg Arg
    355
                        360
                                           365
Tyr Gly Ala His Ala Ser Leu Arg Tyr Asn Pro Arg Glu Arg Gln Leu
                    375
                                     380
Tyr Ala Trp Asp Asp Gly Tyr Gln Ile Val Tyr Lys Leu Glu Met Arg
                 390
                                   395
Lys Lys Glu Glu Glu Val *
              405 406
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<210> 1047 <211> 268 <212> PRT <213> Homo sapiens

<400> 1047
Met Ile Gln Lys Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu Leu Val
1 5 10 15

Tyr Leu Leu Phe Met Ile Gly Tyr Ala Ser Ala Leu Val Ser Leu Leu 25 Asn Pro Cys Ala Asn Met Lys Val Cys Asn Glu Asp Gln Thr Asn Cys 40 Thr Val Pro Thr Tyr Pro Ser Cys Arg Asp Ser Glu Thr Phe Ser Thr 60 Phe Leu Leu Asp Leu Phe Lys Leu Thr Ile Gly Met Gly Asp Leu Glu 70 Met Leu Ser Ser Thr Lys Tyr Pro Val Val Phe Ile Ile Leu Leu Val 85 90 Thr Tyr Ile Ile Leu Thr Phe Val Leu Leu Leu Asn Met Leu Ile Ala 100 - 105 Leu Met Gly Glu Thr Val Gly Gln Val Ser Lys Glu Ser Lys His Ile 120 125 Trp Lys Leu Gln Trp Ala Thr Thr Ile Leu Asp Ile Glu Arg Ser Phe 135 140 Pro Val Phe Leu Arg Lys Ala Phe Arg Ser Gly Glu Met Val Thr Val 150 155 Gly Lys Ser Ser Asp Gly Thr Pro Asp Arg Arg Trp Cys Phe Arg Val 165 170 Asp Glu Val Asn Trp Ser His Trp Asn Gln Asn Leu Gly Ile Ile Asn 180 185 Glu Asp Pro Gly Lys Asn Glu Thr Tyr Gln Tyr Tyr Gly Phe Ser His 200 205 Thr Val Gly Arg Leu Arg Arg Asp Arg Trp Ser Ser Val Val Pro Arg 215 220 Val Val Glu Leu Asn Lys Asn Ser Asn Pro Asp Glu Val Val Pro 230 235 Leu Asp Ser Met Gly Asn Pro Arg Cys Asp Gly His Gln Gln Gly Tyr 245 250 Pro Arg Lys Trp Arg Thr Asp Asp Ala Pro Leu \* 265

<210> 1048 <211> 59

<212> PRT

<213> Homo sapiens

<400> 1048

 Met
 Trp
 Ser
 His
 Phe
 Trp
 Lys
 Val
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 Thr
 Gln
 Gly
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 Phe
 Val
 Ala

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 Ile
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 Val
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<210> 1049

<211> 77

<212> PRT

<213> Homo sapiens

<210> 1050 <211> 474 <212> PRT <213> Homo sapiens

<400> 1050 Met Arg Ala Leu Val Leu Leu Gly Cys Leu Leu Ala Ser Leu Leu Phe 10 Ser Gly Gln Ala Glu Glu Thr Glu Asp Ala Asn Glu Glu Ala Pro Leu 20 25 Arg Asp Arg Ser His Ile Glu Lys Thr Leu Met Leu Asn Glu Asp Lys 35 40 Pro Ser Asp Asp Tyr Ser Ala Val Leu Gln Arg Leu Arg Lys Ile Tyr - 55 His Ser Ser Ile Lys Pro Leu Glu Gln Ser Tyr Lys Tyr Asn Glu Leu 70 Arg Gln His Glu Ile Thr Asp Gly Glu Ile Thr Ser Lys Pro Met Val 85 90 Leu Phe Leu Gly Pro Trp Ser Val Gly Lys Ser Thr Met Ile Asn Tyr 100 105 Leu Leu Gly Leu Glu Asn Thr Arg Tyr Gln Leu Tyr Thr Gly Ala Glu 120 125 Pro Thr Thr Ser Glu Phe Thr Val Leu Met His Gly Pro Lys Leu Lys 135 Thr Ile Glu Gly Ile Val Met Ala Ala Asp Ser Ala Arg Ser Phe Ser 150 155 Pro Leu Glu Lys Phe Gly Gln Asn Phe Leu Glu Lys Leu Ile Gly Ile 170 Glu Val Pro His Lys Leu Leu Glu Arg Val Thr Phe Val Asp Thr Pro 185 190 Gly Ile Ile Glu Asn Arg Lys Gln Gln Glu Arg Gly Tyr Pro Phe Asn 205 Asp Val Cys Gln Trp Phe Ile Asp Arg Ala Asp Leu Ile Phe Val Val 215 Phe Asp Pro Thr Lys Leu Asp Val Gly Leu Glu Leu Glu Met Leu Phe 230 235 Arg Gln Leu Lys Gly Arg Glu Ser Gln Ile Arg Ile Ile Leu Asn Lys 245 250 Ala Asp Asn Leu Ala Thr Gln Met Leu Met Arg Val Tyr Gly Ala Leu 265 Phe Trp Ser Leu Ala Pro Leu Ile Asn Val Thr Glu Pro Pro Arg Val 280 285 Tyr Val Ser Ser Phe Trp Pro Gln Glu Tyr Lys Pro Asp Thr His Gln 295 300

Glu Leu Phe Leu Gln Glu Glu Ile Ser Leu Leu Glu Asp Leu Asn Gln , 310 315 Val Ile Glu Asn Arg Leu Glu Asn Lys Ile Ala Phe Ile Arg Gln His 325 330 Ala Ile Arg Val Arg Ile His Ala Leu Leu Val Asp Arg Tyr Leu Gln 345 Thr Tyr Lys Asp Lys Met Thr Phe Phe Ser Asp Gly Glu Leu Val Phe 360 Lys Asp Ile Val Glu Asp Pro Asp Lys Phe Tyr Ile Phe Lys Thr Ile 375 380 Leu Ala Lys Thr Asn Val Ser Lys Phe Asp Leu Pro Asn Arg Glu Ala 390 395 Tyr Lys Asp Phe Phe Gly Ile Asn Pro Ile Ser Ser Phe Lys Leu Leu 405 410 Ser Gln Gln Cys Ser Tyr Met Gly Gly Cys Phe Leu Glu Lys Ile Glu 425 430 Arg Ala Ile Thr Gln Glu Leu Pro Gly Leu Leu Gly Ser Leu Gly Leu 440 Gly Lys Asn Pro Gly Ala Leu Asn Cys Asp Lys Thr Gly Cys Ser Glu 455 Thr Pro Lys Asn Arg Tyr Arg Lys His \* 470

<210> 1051 <211> 47 <212> PRT <213> Homo sapiens

<210> 1052 <211> 233 <212> PRT <213> Homo sapiens

85 90 Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr Ala Gly Arg 105 100 Thr Thr Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln 115 120 125 Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu 135 140 Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr 155 Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys 165 170 Ala Gly Val Glu Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr 180 185 Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His 195 200 205 Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys 215 Thr Val Ala Pro Thr Glu Cys Ser 230 232

<210> 1053 <211> 147 <212> PRT <213> Homo sapiens

<400> 1053 Met Gly Ala Asp Arg Gly Pro His Val Val Leu Trp Thr Leu Ile Cys 10 Leu Pro Val Val Phe Ile Leu Ser Phe Val Val Ser Phe Tyr Tyr Gly 25 Thr Ile Thr Trp Tyr Asn Ile Phe Leu Val Tyr Asn Glu Glu Arg Thr Phe Trp His Lys Ile Ser Tyr Cys Pro Cys Leu Val Leu Phe Tyr Pro 55 Val Leu Ile Met Ala Met Ala Ser Ser Leu Gly Leu Tyr Ala Ala Val 70 Val Gln Leu Ser Trp Ser Trp Glu Ala Trp Trp Gln Ala Ala Arg Asp 90 Met Glu Lys Gly Phe Cys Gly Trp Leu Cys Ser Lys Leu Gly Leu Glu 100 105 Asp Cys Ser Pro Tyr Ser Ile Val Glu Leu Leu Glu Ser Asp Asn Ile 120 125 Ser Ser Thr Leu Ser Asn Lys Asp Pro Ile Gln Glu Val Glu Thr Ser 135 Thr Val \* 145 146

<210> 1054 <211> 123 <212> PRT <213> Homo sapiens

<400> 1054

Met Tyr Val Thr Leu Val Phe Arg Val Lys Gly Ser Arg Leu Val Lys 10 Pro Ser Leu Cys Leu Ala Leu Leu Cys Pro Ala Phe Leu Val Gly Val 25 Val Arg Val Ala Glu Tyr Arg Asn His Trp Ser Asp Val Leu Ala Gly 40 Phe Leu Thr Gly Ala Ala Ile Ala Thr Phe Leu Val Thr Cys Val Val 55 His Asn Phe Gln Ser Arg Pro Pro Ser Gly Arg Arg Leu Ser Pro Trp Glu Asp Leu Gly Gln Ala Pro Thr Met Asp Ser Pro Leu Glu Lys Asn 85 90 Pro Arg Ser Ala Gly Arg Ile Arg His Arg His Gly Ser Pro His Pro 100 105 Ser Arg Arg Thr Ala Pro Ala Val Ala Thr \* 115 120

<210> 1055 <211> 122 <212> PRT

<213> Homo sapiens

<400> 1055 Met Leu Thr Cys Leu Phe Ser Phe Gln Gly Cys Trp Arg Ala Arg Gly 5 10 Trp Gln Arg Leu Cys Glu Gly Arg Arg Gly Trp Pro Gly Val Gly Gln Arg Thr Leu Lys Val Ser Glu Pro Ala Pro Leu Arg Val Gly Arg Ala 35 40 Leu Pro Gln Ala Leu Leu Gly Ala Arg Pro His Cys Val Phe Pro Gly 55 Gly Glu Val Leu Gly Val Glu Ala Ala Phe Gly Ser Ser Phe Ile Leu 70 Ser Thr Phe Phe Leu His Gln Pro Leu Phe Phe Pro Gly Pro Lys Leu 85 90 Arg Ala Thr Gln Tyr Leu Ile Ser Ser Asp Pro Thr His Leu Pro Ala 100 105 Gly Arg Gly Pro Asn Ser Val Ser Met \* 120 121

<210> 1056 <211> 51 <212> PRT <213> Homo sapiens

50

<210> 1057 <211> 260 <212> PRT

<213> Homo sapiens

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<400> 1057
Met Glu Ala Pro Ala Gln Leu Leu Phe Leu Leu Leu Trp Leu Pro
                                    10
Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser
                                25
Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
                           40
Val Gly Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
                       55
Arg Pro Leu Ile Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala
                   70
Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
               85
                                   90
Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln His Arg Asp
          100
                              105
                                                 110
Asn Trp Pro Pro Gly Ala Thr Phe Gly Gly Gly Thr Lys Val Glu Ile
                          120
                                              125
Lys His Thr Thr Gly Glu Ile Val Leu Thr Gln Ala Pro Gly Thr Leu
                       135
                                          140
Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln
                  150
                                      155
Thr Ile Gly Ser Thr Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys
                                  170
                                                     175
Ala Pro Lys Leu Leu Ile Tyr Trp Phe Ile Gln Phe Ala Lys Arg Gly
         180
                             185
Pro Ile Lys Val Gln Cys His Arg Val Arg Gly Gln Thr Ser Leu Ser
       195
                          200
Pro Ser Ala Asp Trp Ser Leu Lys Ile Leu Gln Cys Ile Ser Val Thr
                      215
                                         220
Asn Met Gly Ala His Pro Thr Leu Leu Ala Glu Gly Pro Arg Trp Arg
                                      235
Ser Asn Glu Leu Trp Leu His His Leu Ser Ser Ser Arg His Leu
                                  250
Met Ser Ser *
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<210> 1058

259

<211> 52

<212> PRT

<213> Homo sapiens

<400> 1058

Met Lys Gly Leu Phe Cys Leu Trp Pro Leu Val Arg Ser Val Ser Ser 1 5 10 15 Leu Met Thr Ser Ser Thr Ser Cys Pro Ser Pro Pro Thr Leu Pro Pro 20 25 30

Trp Arg Pro Cys Leu Pro Arg Leu Arg Met Arg Val Leu Val Leu Leu 35 40 45

Ile Trp Ser \* 50 51

<210> 1059 <211> 97 <212> PRT <213> Homo sapiens

<210> 1060 <211> 99 <212> PRT <213> Homo sapiens

<210> 1061 <211> 64 <212> PRT <213> Homo sapiens

Lys Leu \*

<210> 1062 <211> 149 <212> PRT <213> Homo sapiens

<400> 1062 Met Tyr Leu Ser Asn Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro 5 10 Phe Thr Leu Thr Leu Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys 25 Lys His Leu Lys Lys Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro 40 Ser Met Lys Val His Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu 55 60 Leu Leu Cys Ala Ile Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn 70 75 Phe Gly Arg Leu Glu Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile 85 90 Ile Phe Ser Tyr Pro Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn 100 105 Lys Lys Leu Lys Gln Ile Phe Leu Ser Val Leu Arg His Val Arg Tyr 120 125 Trp Val Lys Asp Arg Ser Leu Arg Leu His Arg Phe Thr Arg Gly Ala 135 Leu Cys Val Phe \* 148

<210> 1063 <211> 63 <212> PRT <213> Homo sapiens

<210> 1064 <211> 92 <212> PRT <213> Homo sapiens

<400> 1064 Met Met Leu Met Ser Leu Gly Gly Leu Leu Gly Pro Pro Leu Ser Gly 10 Phe Leu Arg Asp Glu Thr Gly Asp Phe Thr Ala Ser Phe Leu Leu Ser 25 Gly Ser Leu Ile Leu Ser Gly Ser Phe Ile Tyr Ile Gly Leu Pro Arg 40 Ala Leu Pro Ser Cys Gly Pro Ala Ser Pro Pro Ala Thr Pro Pro Pro 60 55 Glu Thr Gly Glu Leu Leu Pro Ala Pro Gln Ala Val Leu Leu Ser Pro 70 75 Gly Gly Pro Gly Ser Thr Leu Asp Thr Thr Cys 90 91 85

<210> 1065 <211> 67 <212> PRT <213> Homo sapiens

<210> 1066 <211> 78 <212> PRT <213> Homo sapiens

50 55 60 Leu Ala Gly Trp Asp Leu Thr Gly Ala Pro Gly Ser Leu Gly 65 70 75 78

<210> 1067 <211> 55 <212> PRT

<213> Homo sapiens

<210> 1068 <211> 48 <212> PRT <213> Homo sapiens

<210> 1069 <211> 64 <212> PRT <213> Homo sapiens

<210> 1070

<211> 73 <212> PRT <213> Homo sapiens

<210> 1071 <211> 152 <212> PRT <213> Homo sapiens

<400> 1071 Met Phe Trp Thr Met Ile Ile Leu Leu Gln Val Leu Ile Pro Ile Ser 10 Leu Tyr Val Ser Ile Glu Ile Val Lys Leu Gly Gln Ile Tyr Phe Ile 20 25 Gln Ser Asp Val Asp Phe Tyr Asn Glu Lys Met Asp Ser Ile Val Gln 35 40 45 Cys Arg Ala Leu Asn Ile Ala Glu Asp Leu Gly Gln Ile Gln Tyr Leu 55 Phe Ser Asp Lys Thr Gly Thr Leu Thr Glu Asn Lys Met Val Phe Arg Arg Trp Ser Gly Gly Arg Phe Asp Tyr Cys Pro Gly Glu Lys Ala Arg 85 90 Arg Val Glu Ser Phe Gln Glu Ala Ala Phe Glu Glu Glu His Phe Leu 100 105 Thr Thr Gly Arg Gly Phe Leu Thr His Met Ala Asn Pro Arg Ala Pro 120 Pro Leu Ala Asp Thr Phe Lys Met Gly Ala Ser Gly Arg Leu Ser Pro 135 Pro Ser Leu Thr Ala Arg Gly Ala 150

<210> 1072 <211> 113 <212> PRT <213> Homo sapiens

 $<\!\!400\!\!> 1072$  Met Thr Ala Gly Val Leu Trp Gly Leu Phe Gly Val Leu Gly Phe Thr 1 5 10 15 Gly Val Ala Leu Leu Leu Tyr Ala Leu Phe His Lys Ile Ser Gly Glu

<210> 1073

<211> 52

<212> PRT

<213> Homo sapiens

<400> 1073

<210> 1074

<211> 78

<212> PRT

<213> Homo sapiens

<400> 1074

 Met
 Phe
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 Arg
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 Tyr
 Ala
 Val
 Cys
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 Met
 Trp
 Gly
 Phe

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 Asp
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 Val
 Trp
 Ser
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 Gln
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<210> 1075

<211> 253

<212> PRT

<213> Homo sapiens

<400> 1075 Met Ser Ser Ser Pro Gly Leu Leu Phe Ser Ser Leu Ser His Leu Leu -5 10 Leu Asn Ser Ser Thr Leu Ala Leu Leu Thr His Arg Leu Ser Gln Met 20 25 Thr Cys Leu Gln Ser Leu Arg Leu Asn Arg Asn Ser Ile Gly Asp Val 40 Gly Cys Cys His Leu Ser Glu Ala Leu Arg Ala Ala Thr Ser Leu Glu 60 Glu Leu Asp Leu Ser His Asn Gln Ile Gly Asp Ala Gly Asp Gln His 70 Leu Ala Thr Ile Leu Pro Gly Leu Pro Glu Leu Arg Lys Ile Asp Leu 85 Ser Gly Asn Ser Ile Ser Ser Ala Gly Gly Val Gln Leu Ala Glu Ser 100 105 Leu Val Leu Cys Arg Arg Leu Glu Glu Leu Met Leu Gly Cys Asn Ala 120 Leu Gly Asp Pro Thr Ala Leu Gly Leu Ala Gln Glu Leu Pro Gln His 135 140 Leu Arg Val Leu His Leu Pro Phe Ser His Leu Gly Pro Asp Gly Ala 150 155 Leu Ser Leu Ala Gln Asp Leu Asp Gly Ser Pro His Leu Glu Glu Ile 165 170 Ser Leu Ala Glu Asn Asn Leu Ala Gly Gly Val Leu Arg Phe Cys Met 185 Glu Leu Pro Leu Leu Arg Gln Ile Glu Leu Ser Trp Asn Leu Leu Gly 200 Asp Glu Ala Ala Glu Leu Ala Gln Val Leu Pro Gln Met Gly Arg Leu Lys Arg Val Glu Tyr Glu Gly Pro Gly Glu Glu Trp Asp Gly Leu 230 235 Lys Gly Asp Leu His Pro Gly Asn Thr Lys Arg Pro Leu 250

<210> 1076 <211> 64 <212> PRT <213> Homo sapiens

<210> 1077 <211> 147 <212> PRT <213> Homo sapiens

<400> 1077 Met Met Lys Ser Leu Arg Val Leu Leu Val Ile Leu Trp Leu Gln Leu 10 5 Ser Trp Val Trp Ser Gln Gln Lys Glu Val Glu Gln Asn Ser Gly Pro 20 25 Leu Ser Val Pro Glu Gly Ala Ile Ala Ser Leu Asn Cys Thr Tyr Ser 35 40 Asp Arg Gly Ser Gln Ser Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys 55 Ser Pro Glu Leu Ile Met Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp 70 75 Gly Arg Phe Thr Ala Gln Leu Asn Lys Ala Ser Gln Tyr Val Ser Leu 90 85 Leu Ile Arg Asp Ser Gln Pro Ser Asp Ser Ala Thr Tyr Leu Cys Ala 100 105 Asp Tyr Ser Gly Asn Thr Pro Leu Val Phe Gly Lys Gly Thr Arg Leu 120 125 Ser Val Ile Ala Asn Ile Gln Asn Pro Asp Pro Ala Leu Tyr Gln Leu Arg Asp Ser 145 147

<210> 1078 <211> 55 <212> PRT <213> Homo sapiens

<210> 1079 <211> 97 <212> PRT <213> Homo sapiens

Leu Met Lys Asp Pro Arg Phe Trp Ile Ala Ile Ala Ala Tyr Leu Ala 65 70 75 75 80 80 80 Cys Val Leu Phe Ala Val Phe Phe Asn Ile Phe Leu Ser Pro Ala Asn 90 95 96

<210> 1080 <211> 134 <212> PRT <213> Homo sapiens

. <400> 1080 Met Leu Ser Ile Leu Leu Ala Thr Leu Thr Leu Ser Leu Lys Glu Lys 10 5 Arg Gly Glu Arg Ser Ile His Gln Pro Glu Pro Ser Glu Lys Ser Val 20 25 Cys Leu Pro Val Ser Gly Ala Asp Pro Phe Arg Gly Ser Arg Gly Arg Gly Lys Glu Ile Arg Arg Glu Lys Asp Ile Gly Leu Leu Glu His Val Gly Gln Glu Val Pro Arg Arg Ile Cys Glu Gln Leu Pro Asp Ser Lys 70 Ala Leu Ala Arg Pro Gln Asp Gly Pro Cys Leu Leu Asp Ile Arg Lys 90 Pro Lys Gly Gln Asn Lys Asn Thr Cys Leu Val Gly Glu Gly Ser Leu 105 Arg Gly His Gln Val Gly Gln Ile Pro Leu Val Thr His Leu Trp Arg 120 Leu Pro Gln Lys Cys \* 133

<210> 1081 <211> 185 <212> PRT <213> Homo sapiens

<400> 1081 Met Lys Ile Leu Val Ala Phe Leu Val Val Leu Thr Ile Phe Gly Ile 5 10 Gln Ser His Gly Tyr Glu Val Phe Asn Ile Ile Ser Pro Ser Asn Asn 20 25 Gly Gly Asn Val Gln Glu Thr Val Thr Ile Asp Asn Glu Lys Asn Thr 40 45 Ala Ile Ile Asn Ile His Ala Gly Ser Cys Ser Ser Thr Thr Ile Phe 60 55 Asp Tyr Lys His Gly Tyr Ile Ala Ser Arg Val Leu Ser Arg Arg Ala 75 Cys Phe Ile Leu Lys Met Asp His Gln Asn Ile Pro Pro Leu Asn Asn 90 Leu Gln Trp Tyr Ile Tyr Glu Lys Gln Ala Leu Asp Asn Met Phe Ser 105 110 100 Ser Lys Tyr Thr Trp Val Lys Tyr Asn Pro Leu Glu Ser Leu Ile Lys

<210> 1082 <211> 285 <212> PRT

<213> Homo sapiens .

<221> misc\_feature <222> (1)...(285)

<223> Xaa = any amino acid or nothing

<400> 1082 Met Val Ile Ala Leu Ile Ile Phe Leu Arg Ser Pro Ala Met Ala Gly 10 Gly Leu Phe Ala Ile Glu Arg Glu Phe Phe Phe Glu Leu Gly Leu Tyr 20 25 Asp Pro Gly Leu Gln Ile Trp Gly Gly Glu Asn Phe Glu Ile Ser Tyr 35 40 Lys Ile Trp Gln Cys Gly Gly Lys Leu Leu Phe Xaa Pro Cys Ser Arg 55 60 Val Gly His Ile Tyr Arg Leu Glu Gly Trp Gln Gly Asn Pro Pro 70 Ile Tyr Val Gly Ser Ser Pro Thr Leu Lys Asn Tyr Val Arg Val Val 85 90 Glu Val Trp Trp Asp Glu Tyr Lys Asp Tyr Phe Tyr Ala Ser Arg Pro 100 105 Glu Ser Gln Ala Leu Pro Tyr Gly Asp Ile Ser Glu Leu Lys Lys Phe 120 125 Arg Glu Asp His Asn Cys Lys Ser Phe Lys Trp Phe Met Glu Glu Ile 135 140 Ala Tyr Asp Ile Thr Ser His Tyr Pro Leu Pro Pro Lys Asn Val Asp 150 155 Trp Gly Glu Ile Arg Gly Phe Glu Thr Ala Tyr Cys Ile Asp Ser Met 165 170 Gly Lys Thr Asn Gly Gly Phe Val Glu Leu Gly Pro Cys His Arg Met 185 Gly Gly Asn Gln Leu Phe Arg Ile Asn Glu Ala Asn Gln Leu Met Gln 200 205 Tyr Asp Gln Cys Leu Thr Lys Gly Ala Asp Gly Ser Lys Val Met Ile 210 215 Thr His Cys Asn Leu Asn Glu Phe Lys Glu Trp Gln Tyr Phe Lys Asn 230 235 Leu His Arg Phe Thr His Ile Pro Ser Gly Lys Cys Leu Asp Arg Ser 245 250 Glu Val Leu His Gln Val Phe Ile Ser Asn Cys Asp Ser Ser Lys Thr 265 Thr Gln Lys Trp Glu Met Asn Asn Ile His Ser Val \* · 275 280

<210> 1083 <211> 73 <212> PRT <213> Homo sapiens

<210> 1084 <211> 56 <212> PRT <213> Homo sapiens

<210> 1085 <211> 68 <212> PRT <213> Homo sapiens

<210> 1086 <211> 62 <212> PRT <213> Homo sapiens

<210> 1087 <211> 294 <212> PRT <213> Homo sapiens

<400> 1087 Met Pro Tyr Val Thr Glu Ala Thr Arg Val Gln Leu Val Leu Pro Leu 10 Leu Val Ala Glu Ala Ala Ala Pro Ala Phe Leu Glu Ala Phe Ala 20 25 Ala Asn Val Leu Glu Pro Arg Glu His Ala Leu Leu Thr Leu Leu 40 Val Tyr Gly Pro Arg Glu Gly Gly Arg Gly Ala Pro Asp Pro Phe Leu 55 Gly Val Lys Ala Ala Ala Glu Leu Glu Arg Arg Tyr Pro Gly Thr 70 Arg Leu Ala Trp Leu Ala Val Arg Ala Glu Ala Pro Ser Gln Val Arg 85 90 Leu Met Asp Val Val Ser Lys Lys His Pro Val Asp Thr Leu Phe Phe 105 . Leu Thr Thr Val Trp Thr Arg Pro Gly Pro Glu Val Leu Asn Arg Cys 120 125 Arg Met Asn Ala Ile Ser Gly Trp Gln Ala Phe Phe Pro Val His Phe 135 140 Gln Glu Phe Asn Pro Ala Leu Ser Pro Gln Arg Ser Pro Pro Gly Pro 150 155 Pro Gly Ala Gly Pro Asp Pro Pro Ser Pro Pro Gly Ala Asp Pro Ser 165 170 Arg Gly Ala Pro Ile Gly Gly Arg Phe Asp Arg Gln Ala Ser Ala Glu 185 Gly Cys Phe Tyr Asn Ala Asp Tyr Leu Ala Ala Arg Ala Arg Leu Ala 200 Gly Glu Leu Ala Gly Gln Glu Glu Glu Glu Ala Leu Glu Gly Leu Glu 215 Val Met Asp Val Phe Leu Arg Phe Ser Gly Leu His Leu Phe Arg Ala 230 235 Val Glu Pro Gly Leu Val Gln Lys Phe Ser Leu Arg Asp Cys Ser Pro 245 250

<210> 1088 <211> 477 <212> PRT <213> Homo sapiens

<400> 1088 Met Gln Trp Lys Val Thr Leu Thr Ser Arg Trp Gly Leu Leu Arg His 10 Cys Gln Val Leu Ala Gly Leu Leu His Leu Gly Asn Ile Gln Phe Ala 20 Ala Ser Glu Asp Glu Ala Gln Pro Cys Gln Pro Met Asp Asp Ala Lys Tyr Ser Val Arg Thr Ala Ala Ser Leu Leu Gly Leu Pro Glu Asp Val 55 Leu Leu Glu Met Val Gln Ile Lys Thr Ile Arg Ala Gly Arg Gln Gln 75 Gln Val Phe Arg Lys Pro Cys Ala Arg Ala Glu Cys Asp Thr Arg Arg 90 85 Asp Cys Leu Ala Lys Leu Ile Tyr Ala Arg Leu Phe Asp Trp Leu Val 105 Ser Val Ile Asn Ser Ser Ile Cys Ala Asp Thr Asp Ser Trp Thr Thr 120 Phe Ile Gly Leu Leu Asp Val Tyr Gly Phe Glu Ser Phe Pro Asp Asn 135 Ser Leu Glu Gln Leu Cys Ile Asn Tyr Ala Asn Glu Lys Leu Gln Gln 150 155 His Phe Val Ala His Tyr Leu Arg Ala Gln Gln Glu Glu Tyr Ala Val 170 165 Glu Gly Leu Glu Trp Ser Phe Ile Asn Tyr Gln Asp Asn Gln Pro Cys 185 Leu Asp Leu Ile Glu Gly Ser Pro Ile Ser Ile Cys Ser Leu Ile Asn 200 Glu Glu Cys Arg Leu Asn Arg Pro Ser Ser Ala Ala Gln Leu Gln Thr 215 220 Arg Ile Glu Thr Ala Leu Ala Gly Ser Pro Cys Leu Gly His Asn Lys 235 230 Leu Ser Arg Glu Pro Ser Phe Ile Val Val His Tyr Ala Gly Pro Val 245 250 Arq Tyr His Thr Ala Gly Leu Val Glu Lys Asn Lys Asp Pro Ile Pro 265 Pro Glu Leu Thr Arg Leu Leu Gln Gln Ser Gln Asp Pro Leu Leu Met 280 285 Gly Leu Phe Pro Thr Asn Pro Lys Glu Lys Thr Gln Glu Glu Pro Pro 295 300 Gly Gln Ser Arg Ala Pro Val Leu Thr Val Val Ser Lys Phe Lys Ala 310 315 Ser Leu Glu Gln Leu Leu Gln Val Leu His Ser Thr Thr Pro His Tyr 330 Ile Arg Cys Ile Met Pro Asn Ser Gln Gly Gln Ala Gln Thr Phe Leu

340 345 Gln Glu Glu Val Leu Ser Gln Leu Glu Ala Cys Gly Leu Val Glu Thr 355 · 360 365 Ile His Ile Ser Ala Ala Gly Phe Pro Ile Arg Val Ser His Arg Asn 375 380 Phe Val Glu Arg Tyr Lys Leu Leu Arg Arg Leu His Pro Cys Thr Ser 390 395 Ser Gly Pro Asp Ser Pro Tyr Pro Ala Lys Gly Leu Pro Glu Trp Cys 405 410 Pro His Ser Glu Glu Ala Thr Leu Glu Pro Leu Ile Gln Asp Ile Leu 420 425 430 His Thr Leu Pro Val Leu Thr Gln Ala Ala Ala Ile Thr Gly Asp Ser 440 445 Ala Glu Ala Met Pro Ala Pro Met His Cys Gly Arg Thr Lys Val Phe 455 Met Thr Asp Ser Met Leu Glu Leu Leu Glu Cys Gly Ala 470

<210> 1089 <211> 66

<212> PRT

<213> Homo sapiens

<400> 1089

 Met Ala Ala Gly Val
 Ser Ser Val
 Leu
 Leu
 Leu
 Phe
 Thr
 Leu
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 Glu
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<210> 1090

<211> 185

<212> PRT

<213> Homo sapiens

<400> 1090

Met Leu Trp Leu Leu Phe Phe Leu Val Thr Ala Ile His Ala Glu Leu 5 10 Cys Gln Pro Gly Ala Glu Asn Ala Phe Lys Val Arg Leu Ser Ile Arg 20 25 Thr Ala Leu Gly Asp Lys Ala Tyr Ala Trp Asp Thr Asn Glu Glu Tyr 40 Leu Phe Lys Ala Met Val Ala Phe Ser Met Arg Lys Val Pro Asn Arg . 60 55 Glu Ala Thr Glu Ile Ser His Val Leu Leu Cys Asn Val Thr Gln Arg 70 75 Val Ser Phe Trp Phe Val Val Thr Asp Pro Ser Lys Asn His Thr Leu 90

Pro Ala Val Glu Val Gln Ser Ala Ile Arg Met Asn Lys Asn Arg Ile 100 105 Asn Asn Ala Phe Phe Leu Asn Asp Gln Thr Leu Glu Phe Leu Lys Ile 120 125 Pro Ser Thr Leu Ala Pro Pro Met Asp Pro Ser Val Pro Ile Trp Ile 135 140 Ile Ile Phe Gly Val Ile Phe Cys Ile Ile Ile Val Ala Ile Ala Leu 150 155 Leu Ile Leu Ser Gly Ile Trp Gln Arg Arg Lys Asn Lys Glu Pro 165 170 Ser Glu Val Asp Asp Ala Glu Glu \* 180

<210> 1091 <211> 47 <212> PRT <213> Homo sapiens

<210> 1092 <211> 46 <212> PRT <213> Homo sapiens

<210> 1093 <211> 64 <212> PRT <213> Homo sapiens

35 40 45
Ser Leu Pro Gly Ala Pro Ala Thr Ser Ala Ser Pro Ser Val Leu \*
50 55 60 63

<210> 1094 <211> 85 <212> PRT

<213> Homo sapiens

<400> 1094

 Met His
 Phe
 Leu
 Ala
 Thr
 Phe
 Ala
 Leu
 Phe
 Phe
 Ile
 Phe
 Gly
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 Asn
 Leu
 Leu
 Leu
 Ala
 Glu
 Glu
 Val
 Asn
 Asn
 Leu
 Leu
 Leu
 Ala
 Glu
 Glu
 Phe
 Phe
 Leu
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 Val
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<210> 1095 <211> 89 <212> PRT <213> Homo sapiens

<210> 1096 <211> 158 <212> PRT <213> Homo sapiens

Lys Phe Leu Lys Lys Ala Asp Thr Arg Asp Ser Arg Gln Ala Cys Leu 20 25 Ala Ala Ser Leu Ala Leu Ala Leu Asn Gly Val Phe Thr Asn Thr Ile Lys Leu Ile Val Gly Arg Pro Arg Pro Asp Phe Phe Tyr Arg Cys Phe 55 Pro Asp Gly Leu Ala His Ser Asp Leu Met Cys Thr Gly Asp Lys Asp 70 75 Val Val Asn Glu Gly Arg Lys Ser Phe Pro Ser Gly His Ser Ser Phe 90 85 Ala Phe Ala Gly Leu Ala Phe Ala Ser Phe Tyr Leu Ala Gly Lys Leu 105 His Cys Phe Thr Pro Gln Gly Arg Gly Lys Ser Trp Arg Phe Cys Ala 120 125 Phe Leu Ser Pro Leu Leu Phe Ala Ala Val Ile Ala Leu Ser Arg Thr 135 140 Cys Asp Tyr Lys His His Trp Gln Gly Pro Phe Lys Trp 155 150

<210> 1097 <211> 88 <212> PRT <213> Homo sapiens

<400> 1097

 Met
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 Thr
 Thr
 Ser
 Leu
 Lys
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 Ser
 Ser
 Arg
 Leu
 Cys
 Cys
 Phe
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<210> 1098 <211> 58 <212> PRT <213> Homo sapiens

<210> 1099 <211> 72 <212> PRT <213> Homo sapiens

<400> 1099

<210> 1100 <211> 47 <212> PRT <213> Homo sapiens

<400> 1100

Met Ser Phe Phe Leu Ile Leu Gly Val Gly Ser Cys Leu Ser Tyr Ser 1 5 10 15

Leu Val Pro Leu Ile Ile Leu Ser Phe Cys His Phe Tyr Pro Glu Ser 20 25 30

Val Gly Cys Pro Asp Ala Pro Ser Pro Arg Val Arg Gly Arg Val 35 40

<210> 1101 <211> 130 <212> PRT <213> Homo sapiens

<400> 1101

Met Arg Pro Leu Lys Pro Gly Ala Pro Leu Pro Ala Leu Phe Leu Leu 5 10 Ala Leu Ala Leu Ser Pro His Gly Ala His Gly Arg Pro Arg Gly Arg 25 Arg Gly Ala Arg Val Thr Asp Lys Glu Pro Lys Pro Leu Leu Phe Leu 40 45 Pro Ala Ala Gly Ala Gly Arg Thr Pro Ser Gly Ser Arg Ser Ala Glu 55 60 Ile Phe Pro Arg Asp Ser Asn Leu Lys Asp Lys Phe Ile Lys His Phe 70 75 Thr Gly Pro Val Thr Phe Ser Pro Glu Cys Ser Lys His Phe His Arg 90 Leu Tyr Tyr Asn Thr Arg Glu Cys Ser Thr Pro Ala Tyr Tyr Lys Arg 105 110

<210> 1102 <211> 170 <212> PRT <213> Homo sapiens

<400> 1102 Met Gln Phe Val Leu Leu Arg Thr Leu Ala Tyr Ile Pro Thr Pro Ile Tyr Phe Gly Ala Val Ile Asp Thr Thr Cys Met Leu Trp Gln Glu 20 25 Cys Gly Val Gln Gly Ser Cys Trp Glu Tyr Asn Val Thr Ser Phe Arg 40 Phe Val Tyr Phe Gly Leu Ala Ala Val Leu Lys Tyr Val Gly Cys Ile . 55 Phe Ile Leu Leu Ala Trp Tyr Ser Ile Lys Asp Thr Glu Asp Glu Gln 70 Pro Arg Leu Arg Gln Lys Lys Ile Cys Leu Ser Thr Leu Ser Asp Thr Met Thr Gln Pro Asp Ser Ala Gly Val Val Ser Cys Pro Leu Phe Thr 100 105 110 Pro Asp Gly Glu Ile His Lys Lys Thr Gly Leu Arg Lys Arg Asp Pro 115 120 125 Gly Gly Thr Thr Glu Pro Thr Pro Gly Pro Leu Arg Lys Arg Pro Leu 135 140 Cys Thr Leu Glu Ala Pro Arg Leu Pro Asn Lys Ala Pro Phe Thr Leu 145 150 155 Glu Leu Ala Leu Leu Arg Val Arg Leu \* 165 169

<210> 1103 <211> 62 <212> PRT <213> Homo sapiens

<210> 1104 <211> 83

<212> PRT <213> Homo sapiens

<400> 1104 Met Lys Gln Leu Ser Pro Leu Pro Leu Pro Trp Val Leu Cys Phe Leu 10 Trp Lys Pro Ser Lys Leu Ser Val Leu Ser Phe Ala Ser Pro Pro Ser 20 25 Thr Lys Pro Ser Gln Gln Ala Gly Leu Val Cys Ser Leu Ile Arg Val 40 Ser Thr Ser Ser Thr Pro Ala Cys Thr Phe Tyr Leu Pro Val Asn Ala 55 60 Lys Cys Arg Ser Cys Pro Leu Asn Asn Pro Pro Trp Glu Val Pro Trp 70 65 75 Ile Asn \* 82

<210> 1105 <211> 124 <212> PRT

<213> Homo sapiens

<400> 1105 Met Val Phe Thr Val Thr Leu Lys Leu Ala Leu Asp Thr His Tyr Trp 5 , 10 Thr Trp Ile Asn His Phe Val Ile Trp Gly Ser Leu Leu Phe Tyr Val 20 25 Val Phe Ser Leu Leu Trp Gly Gly Val Ile Trp Pro Phe Leu Asn Tyr 40 45 Gln Arg Met Tyr Tyr Val Phe Ile Gln Met Leu Ser Ser Gly Pro Ala Trp Leu Ala Ile Val Leu Leu Val Thr Ile Ser Leu Leu Pro Asp Val 70 75 Leu Lys Lys Val Leu Cys Arg Gln Leu Trp Pro Thr Ala Thr Glu Arg 85 90 Val Gln Thr Lys Ser Gln Cys Leu Ser Val Glu Gln Ser Thr Ile Phe 100 105 Met Leu Ser Gln Thr Ser Ser Ser Leu Ser Phe \* 120

<210> 1106 <211> 248 <212> PRT <213> Homo sapiens

Leu Glu Ser Ser Trp Pro Phe Trp Leu Thr Leu Ala Leu Ala Val Ile 55 60 Leu Gln Asn Met Ala Ala His Trp Val Phe Leu Glu Thr His Asp Gly 70 His Pro Gln Leu Thr Asn Arg Arg Val Leu Tyr Ala Ala Thr Phe Leu 90 Leu Phe Pro Leu Asn Val Leu Val Gly Ala Met Val Ala Thr Trp Arg 105 Val Leu Leu Ser Ala Leu Tyr Asn Ala Ile His Leu Gly Gln Met Asp 120 125 Leu Ser Leu Leu Pro Pro Arg Ala Ala Thr Leu Asp Pro Gly Tyr Tyr 135 140 Thr Tyr Arg Asn Phe Leu Lys Ile Glu Val Ser Gln Ser His Pro Ala 150 155 Met Thr Ala Phe Cys Ser Leu Leu Leu Gln Ala Gln Ser Leu Leu Pro 165 170 Arg Thr Met Ala Ala Pro Gln Asp Ser Leu Arg Pro Gly Glu Glu Asp 185 Glu Gly Met Gln Leu Leu Gln Thr Lys Asp Ser Met Ala Lys Gly Ala 195 200 Arg Pro Gly Ala Ser Arg Gly Arg Ala Arg Trp Gly Leu Ala Tyr Thr 215 220 Leu Leu His Asn Pro Thr Leu Gln Val Phe Arg Lys Thr Ala Leu Leu 230 235 Gly Ala Asn Gly Ala Gln Pro \* 245

<210> 1107 <211> 121 <212> PRT <213> Homo sapiens

<400> 1107

Met Met Leu Ala Phe Thr Met Trp Asn Pro Trp Ile Ala Met Cys Leu 10 Leu Gly Leu Ser Tyr Ser Leu Leu Ala Cys Ala Leu Trp Pro Met Val Ala Phe Val Val Pro Glu His Gln Leu Gly Thr Ala Tyr Gly Phe Met 40 Gln Ser Ile Gln Asn Leu Gly Leu Ala Ile Ile Ser Ile Ile Ala Gly 55 60 Met Ile Leu Asp Ser Arg Gly Tyr Leu Phe Leu Glu Val Phe Phe Ile 75 Ala Cys Val Ser Leu Ser Leu Leu Ser Val Val Leu Leu Tyr Leu Val 90 Asn Arg Ala Gln Gly Gly Asn Leu Asn Tyr Ser Ala Arg Gln Arg Glu 100 105 Glu Ile Lys Phe Ser His Thr Glu \* 115 120

<210> 1108 <211> 53 <212> PRT <213> Homo sapiens

<210> 1109 <211> 259 <212> PRT <213> Homo sapiens

<400> 1109 Met His Val Val Ile Val Leu Lys Ala Leu Val Ala Val Gln Ile Leu 10 Leu Ser Ile Lys Glu Tyr Thr Leu Glu Arg Asn His Met His Val Ile 20 25 Ser Val Ile Lys Val Leu Val Lys Ala Gln Thr Ser Leu Asn Ile Arg 40 45 Glu Tyr Thr Leu Val Lys Ser Leu Ile Ile Ala Ile Val Val Arg Lys 55 60 Pro Ser Val Arg Val Leu Thr Leu Phe Phe Ile Arg Glu Phe Thr Leu 70 75 Glu Lys Asn Tyr Tyr Leu Cys Thr Gln Cys Ser Lys Ser Phe Ser Gln 90 Ile Ser Asp Leu Ile Lys His Gln Arg Ile His Thr Gly Glu Lys Pro 100 105 Tyr Lys Cys Ser Glu Cys Arg Lys Ala Phe Ser Gln Cys Ser Ala Leu 115 120 125 Thr Leu His Gln Arg Ile His Thr Gly Lys Lys Pro Asn Pro Cys Asp 135 140 Glu Cys Gly Lys Ser Phe Ser Arg Arg Ser Asp Leu Ile Asn His Gln 150 155 Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Asp Ala Cys Gly Lys 165 170 Ala Phe Ser Thr Cys Thr Asp Leu Ile Glu His Gln Lys Thr His Ala 180 185 Glu Glu Lys Pro Tyr Gln Cys Val Gln Cys Ser Arg Ser Cys Ser Gln 195 200 Leu Ser Glu Leu Thr Ile His Glu Glu Val His Cys Gly Glu Asp Ser 215 220 Gln Asn Val Met Asn Val Arg Lys Pro Leu Val Cys Thr Pro Thr Leu 230 235 Phe Ser Thr Arg Asp Thr Val Pro Glu Lys Asn Leu Met Asn Ala Val 245 250 Asp Tyr \*

<210> 1110

<211> 47 <212> PRT <213> Homo sapiens

<400> 1110

 Met Thr Cys
 Ser Leu Leu Ser Leu Leu Asp Ala Val Cys
 Ser Ser Phe

 1
 5
 10
 15

 Val Gln Ala Phe Cys
 Ser Arg Asp Pro Glu Arg Trp Pro Ala Ile Ser
 20
 25
 30

 Pro His Ser Leu Ser Gly Ala Phe Tyr Phe Leu Asn Val Cys
 \*
 45
 46

<210> 1111 <211> 93 <212> PRT <213> Homo sapiens

<400> 1111

 Met
 Ser
 Leu
 Arg
 Ala
 Pro
 Ser
 Val
 Arg
 Ile
 Phe
 Val
 Tyr
 Leu
 Leu
 Phe

 Arg
 Leu
 His
 Thr
 Gln
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 Gly
 Leu
 Ala
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 Trp
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 Gln
 Trp
 Gly
 Ser
 Val
 Leu
 Ser
 Arg
 Arg
 His
 Trp
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 Arg
 Gln
 Trp
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 Arg
 Pro
 Cys
 Trp
 Arg
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 Pro
 Cys
 Trp
 Arg
 Arg
 Arg
 Pro
 Cys
 Trp
 Leu
 Gln
 Arg
 Arg
 Arg
 Arg
 Arg

<210> 1112 <211> 71 <212> PRT <213> Homo sapiens

<400> 1112

<210> 1113 <211> 47

<212> PRT <213> Homo sapiens

40

<210> 1114 <211> 55 <212> PRT <213> Homo sapiens

<210> 1115 <211> 83 <212> PRT <213> Homo sapiens

<210> 1116 <211> 145 <212> PRT <213> Homo sapiens

<400> 1116 Met Val Leu Leu Val Val Gly Asn Leu Val Asn Trp Ser Phe Ala Leu 5 10 Phe Gly Leu Ile Tyr Arg Pro Arg Asp Phe Ala Ser Tyr Met Leu Gly 25 Ile Phe Ile Cys Asn Leu Leu Leu Tyr Leu Ala Phe Tyr Ile Ile Met 40 45 Lys Leu Arg Ser Ser Glu Lys Val Leu Pro Val Pro Leu Phe Cys Ile 55 60 Val Ala Thr Ala Val Met Trp Ala Ala Ala Leu Tyr Phe Phe Gln 70 75 Asn Leu Ser Ser Trp Glu Gly Thr Pro Ala Glu Ser Arg Glu Lys Asn 85 90 Arg Glu Cys Ile Leu Leu Asp Phe Phe Asp Asp His Asp Ile Trp His 100 105 Phe Leu Ser Ala Thr Ala Leu Phe Phe Ser Phe Leu Asp Leu Leu Thr 120 125 Leu Asp Asp Leu Asp Val Val Arg Arg Asp Gln Ile Pro Val Phe 135 140

<210> 1117 <211> 139 <212> PRT <213> Homo sapiens

<400> 1117 Met Gly Asp Phe Ala Gly Val Asp Phe Val Phe Leu Val Val Cys Phe 5 6**10** Ala Gln Arg Gln Gly Ala Ala Glu Ala Val Gly Ala Val Leu Ala Val 20 25 Leu Leu Cys Asp Thr Leu Leu Gly Val Thr Arg Leu Glu Gly Val Ile 40 His Leu Pro Leu Tyr Phe Gly Leu Ser Gly Ile Glu Val Ile Gln Gln 55 Ala His Asn Arg Gly Ser Ser Arg Phe Gln Leu Leu Ile Arg Trp Arg 70 75 Glu Asp Glu Asp Arg Trp Cys Ser His Ser Ser Phe Asp Val His Leu 85 90 Gly Pro Leu Ala Glu Arg Pro His Val Ser Thr Gln Leu Leu Thr Val 105 Ile Ser Cys Lys Ile Phe Arg Leu Gln Ala Thr Asp Cys Glu Ser Lys 115 120 Phe Cys Pro Arg Ser Ser Ala Ala Glu Pro 130 135

<210> 1118 <211> 194 <212> PRT <213> Homo sapiens

<400> 1118 Met Cys Leu Leu Phe Leu Leu Pro Arg Phe Pro Val Ser Trp Arg Ala 10 Gly Val Asp Gly Ala Ala Pro Ser Ser Gln Asp Leu Trp Arg Ile Arg 20 25 Ser Pro Cys Gly Asp Cys Glu Gly Phe Asp Val His Ile Met Asp Asp 40 Met Ile Lys Arg Ala Leu Asp Phe Arg Glu Ser Arg Glu Ala Glu Pro 55 His Pro Leu Trp Glu Tyr Pro Cys Arg Ser Leu Ser Glu Pro Trp Gln 75 70 Ile Leu Thr Phe Asp Phe Gln Gln Pro Val Pro Leu Gln Pro Leu Cys 85 90 Ala Glu Gly Thr Val Glu Leu Lys Arg Pro Gly Gln Ser His Ala Ala 105 Val Leu Trp Met Glu Tyr His Leu Thr Pro Glu Cys Thr Leu Ser Thr 115 120 Gly Leu Leu Glu Pro Ala Asp Pro Glu Gly Gly Cys Cys Trp Asn Pro 135 140 His Cys Lys Gln Ala Val Tyr Phe Phe Ser Pro Ala Pro Asp Pro Arg 150 155 Ala Leu Leu Gly Gly Pro Arg Thr Val Ser Tyr Ala Val Glu Phe His 165 170 Pro Asp Thr Gly Asp Ile Ile Met Glu Phe Arg His Ala Asp Thr Pro 180 185 Asp \* 193

<210> 1119 <211> 118 <212> PRT <213> Homo sapiens

<400> 1119

Met Leu Val Leu Leu Pro Arg Ser Lys Ala Met Pro Leu Leu Ser Val 5 Asn Val Thr Leu Ala Phe Phe Pro Arg Asn Lys Glu Ile Val Lys Tyr 20 25 Leu Leu Asn Gln Gly Ala Asp Val Thr Leu Arg Ala Lys Asn Gly Tyr 40 Thr Ala Phe Asp Leu Val Met Leu Leu Asn Asp Pro Asp Ile Phe Gly 55 Gly Glu Leu Ile Gly Phe Leu Ser Val Val Thr Glu Leu Val Arg Leu 70 Leu Ala Ser Val Phe Met Gln Val Asn Lys Asp Ile Gly Arg Arg Ser 85 90 His Gln Leu Pro Leu Pro His Ser Lys Val Pro Thr Ala Leu Glu His 100 105 Pro Ser Ala Ala Arg \* 115 117

<210> 1120 <211> 842 <212> PRT

## <213> Homo sapiens

<400> 1120 Met Leu Trp Gly Ser Gly Lys Cys Lys Ala Leu Thr Lys Phe Lys Phe Val Phe Phe Leu Arg Leu Ser Arg Ala Gln Gly Gly Leu Phe Glu Thr 20 25 Leu Cys Asp Gln Leu Leu Asp Ile Pro Gly Thr Ile Arg Lys Gln Thr Phe Met Ala Met Leu Leu Lys Leu Arg Gln Arg Val Leu Phe Leu Leu 55 Asp Gly Tyr Asn Glu Phe Lys Pro Gln Asn Cys Pro Glu Ile Glu Ala 70 75 Leu Ile Lys Glu Asn His Arg Phe Lys Asn Met Val Ile Val Thr Thr 90 85 Thr Thr Glu Cys Leu Arg His Ile Arg Gln Phe Gly Ala Leu Thr Ala 100 105 Glu Val Gly Asp Met Thr Glu Asp Ser Ala Gln Ala Leu Ile Arg Glu 120 Val Leu Ile Lys Glu Leu Ala Glu Gly Leu Leu Gln Ile Gln Lys 135 Ser Arg Cys Leu Arg Asn Leu Met Lys Thr Pro Leu Phe Val Val Ile 150 155 Thr Cys Ala Ile Gln Met Gly Glu Ser Glu Phe His Ser His Thr Gln 170 165 Thr Thr Leu Phe His Thr Phe Tyr Asp Leu Leu Ile Gln Lys Asn Lys 185 His Lys His Lys Gly Val Ala Ala Ser Asp Phe Ile Arg Ser Leu Asp 200 His Cys Gly Tyr Leu Ala Leu Glu Gly Val Phe Ser His Lys Phe Asp 215 Phe Glu Leu Gln Asp Val Ser Ser Val Asn Glu Asp Val Leu Leu Thr Thr Gly Leu Leu Cys Lys Tyr Thr Ala Gln Arg Phe Lys Pro Lys Tyr 245 Lys Phe Phe His Lys Ser Phe Gln Glu Tyr Thr Ala Gly Arg Arg Leu 265 Ser Ser Leu Leu Thr Ser His Glu Pro Glu Glu Val Thr Lys Gly Asn 280 Gly Tyr Leu Gln Lys Met Val Ser Ile Ser Asp Ile Thr Ser Thr Tyr 295 300 Ser Ser Leu Leu Arg Tyr Thr Cys Gly Ser Ser Val Glu Ala Thr Arg 310 315 Ala Val Met Lys His Leu Ala Ala Val Tyr Gln His Gly Cys Leu Leu 325 330 Gly Leu Ser Ile Ala Lys Arg Pro Leu Trp Arg Gln Glu Ser Leu Gln 345 Ser Val Lys Asn Thr Thr Glu Glu Ile Leu Lys Ala Ile Asn Ile 360 Asn Ser Phe Val Glu Cys Gly Ile His Leu Tyr Gln Glu Ser Thr Ser 375 380 Lys Ser Ala Leu Ser Gln Glu Phe Glu Ala Phe Phe Gln Gly Lys Ser 390 395 Leu Tyr Ile Asn Ser Gly Asn Ile Pro Asp Tyr Leu Phe Asp Phe Phe 410 Glu His Leu Pro Asn Cys Ala Ser Ala Leu Asp Phe Ile Lys Leu Gly 425 Phe Tyr Gly Gly Ala Met Ala Ser Trp Glu Lys Ala Ala Glu Asp Thr

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440
       435
Gly Gly Ile His Met Glu Glu Ala Pro Glu Thr Tyr Ile Pro Ser Arg
                      455
                                         460
Ala Val Ser Leu Phe Phe Asn Trp Lys Gln Glu Phe Arg Thr Leu Glu
                  470
                                      475
Val Thr Leu Arg Asp Phe Ser Lys Leu Asn Lys Gln Asp Ile Arg Tyr
               485
                                  490
Leu Gly Lys Ile Phe Ser Ser Ala Thr Ser Leu Arg Leu Gln Ile Lys
           500
                              505
Arg Cys Ala Gly Val Ala Gly Ser Leu Ser Leu Val Leu Ser Thr Cys
                           520
                                              525
Lys Asn Ile Tyr Ser Leu Met Val Glu Ala Ser Pro Leu Thr Ile Glu
                      535
                                          540
Asp Glu Arg His Ile Thr Ser Val Thr Asn Leu Lys Thr Leu Ser Ile
                  550
                                      555
His Asp Leu Gln Asn Gln Arg Leu Pro Gly Gly Leu Thr Asp Ser Leu
              565
                                  570
Gly Asn Leu Lys Asn Leu Thr Lys Leu Ile Met Asp Asn Ile Lys Met
          580
                             585
Asn Glu Glu Asp Ala Ile Lys Leu Ala Glu Gly Leu Lys Asn Leu Lys
                         600
                                             605
Lys Met Cys Leu Phe His Leu Thr His Leu Ser Asp Ile Gly Glu Gly
                      615
                                          620
Met Asp Tyr Ile Val Lys Ser Leu Ser Ser Glu Pro Cys Asp Leu Glu
                   630
                                       635
Glu Ile Gln Leu Val Ser Cys Cys Leu Ser Ala Asn Ala Val Lys Ile
               645
                                  650
Leu Ala Gln Asn Leu His Asn Leu Val Lys Leu Ser Ile Leu Asp Leu
       , 660
                               665
Ser Glu Asn Tyr Leu Glu Lys Asp Gly Asn Glu Ala Leu His Glu Leu
                           680
                                              685
Ile Asp Arg Met Asn Val Leu Glu Gln Leu Thr Ala Leu Met Leu Pro
                       695
                                          700
Trp Gly Cys Asp Val Gln Gly Ser Leu Ser Ser Leu Leu Lys His Leu
                   710
                                      715
Glu Glu Val Pro Gln Leu Val Lys Leu Gly Leu Lys Asn Trp Arg Leu
               725
                                   730
Thr Asp Thr Glu Ile Arg Ile Leu Gly Ala Phe Phe Gly Lys Asn Pro
                               745
Leu Lys Asn Phe Gln Gln Leu Asn Leu Ala Gly Asn Arg Val Ser Ser
                          760
Asp Gly Trp Leu Ala Phe Met Gly Val Phe Glu Asn Leu Lys Gln Leu
                      775
                                         780
Val Phe Phe Asp Phe Ser Thr Lys Glu Phe Leu Pro Asp Pro Ala Leu
                  790
                                      795
Val Arg Lys Leu Ser Gln Val Leu Ser Lys Leu Thr Phe Leu Gln Glu
               805
                                  810
Ala Arg Leu Val Gly Trp Gln Phe Asp Asp Asp Leu Ser Val Ile
           820
                              825
Thr Gly Ala Phe Lys Leu Val Thr Ala *
                           840 841
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<210> 1121 <211> 90 <212> PRT <213> Homo sapiens

<400> 1121 Met Gly Leu Phe Phe Phe Ser Gly Val Gly Ser Phe Val Gly Ser 5 10 Gly Leu Leu Ala Leu Val Ser Ile Lys Ala Ile Gly Trp Met Ser Ser 20 25 His Thr Asp Phe Gly Asn Ile Asn Gly Cys Tyr Leu Asn Tyr Tyr Phe 40 Phe Leu Leu Ala Ala Ile Gln Gly Ala Thr Leu Leu Leu Phe Leu Ile 55 60 Ile Ser Val Lys Tyr Asp His His Arg Asp His Gln Arg Ser Arg Ala 70 Asn Gly Val Pro Thr Ser Arg Arg Ala 85

<210> 1122 <211> 129 <212> PRT <213> Homo sapiens

<400> 1122 Met Phe Leu Leu Phe Trp Phe Ile Leu Ser Glu Gly Cys Pro Leu Leu 5 10 Glu Gln Leu Asn Ile Ser Trp Cys Asp Gln Val Thr Lys Asp Gly Ile 20 25 Gln Ala Leu Val Arg Gly Cys Gly Gly Leu Lys Ala Leu Phe Leu Lys Gly Cys Thr Gln Leu Glu Asp Glu Ala Leu Lys Tyr Ile Gly Ala His 55 Cys Pro Glu Leu Val Thr Leu Asn Leu Gln Thr Cys Leu Gln Ile Thr 70 75 Asp Glu Gly Leu Ile Thr Ile Cys Arg Gly Cys His Lys Leu Gln Ser 90 Leu Cys Ala Ser Gly Cys Ser Asn Ile Thr Asp Ala Ile Leu Asn Ala 100 105 Leu Ser Gln Asn Cys Pro Arg Leu Ile Ile Leu Glu Val Ala Arg Cys Ser

<210> 1123 <211> 243 <212> PRT <213> Homo sapiens

129

55 60 Ala Arg Val Leu Val Asp Gly Glu Glu His Val Gly Phe Leu Lys Thr 70 75 Asp Gly Ser Phe Val Val His Asp Ile Pro Ser Gly Ser Tyr Val Val 85 90 Glu Val Val Ser Pro Ala Tyr Arg Phe Asp Pro Val Arg Val Asp Ile 100 105 110 Thr Ser Lys Gly Lys Met Arg Ala Arg Tyr Val Asn Tyr Ile Lys Thr 115 120 Ser Glu Val Val Arg Leu Pro Tyr Pro Leu Gln Met Lys Ser Ser Gly 135 140 Pro Pro Ser Tyr Phe Ile Lys Arg Glu Ser Trp Gly Trp Thr Asp Phe 150 155 Leu Met Asn Pro Met Val Met Met Val Leu Pro Leu Leu Ile Phe 165 170 Val Leu Leu Pro Lys Val Val Asn Thr Ser Asp Pro Asp Met Arg Arg 180 185 Glu Met Glu Gln Ser Met Asn Met Leu Asn Ser Asn His Glu Leu Pro 195 200 205 Asp Val Ser Glu Phe Met Thr Arg Leu Phe Ser Ser Lys Ser Ser Gly 215 220 Lys Ser Ser Ser Gly Ser Ser Lys Thr Gly Lys Ser Gly Ala Gly Lys 230 235 Arg Arg \* 242

<210> 1124

<211> 71

<212> PRT

<213> Homo sapiens

<400> 1124

 Met
 Leu
 Ser
 Tyr
 Ala
 His
 Ile
 Thr
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 Ala
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 Asp
 Ser
 Arg
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 Asn
 Lys
 Leu
 Ile
 Ser
 Val
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 Tyr

 Gln
 Ala
 Ile
 Thr
 Pro

<210> 1125

<211> 48

<212> PRT

<213> Homo sapiens

<400> 1125

Met Pro Thr Leu Gly Asp Ala Leu Ile Leu Tyr Leu His Leu Val Leu 1 5 10 15
Gly Val Ala Gly Val Leu Gln Pro Pro Gly Pro Arg Pro Ser Gln Ala 20 25 30

Leu Gly Pro Thr Gly Asp Arg Ala Pro Gly Lys Trp Asn Arg Ser \* 35 40 45 47

<210> 1126 <211> 159 <212> PRT <213> Homo sapiens

<400> 1126 Met Phe Leu Ile Val Leu Pro Leu Glu Ser Met Ala His Gly Leu Phe 10 His Glu Leu Gly Asn Cys Leu Gly Gly Thr Ser Val Gly Tyr Ala Ile 20 25 Val Ile Pro Thr Asn Phe Cys Ser Pro Asp Gly Gln Pro Thr Leu Leu 40 Pro Pro Glu His Val Gln Glu Leu Asn Leu Arg Ser Thr Gly Met Leu 55 60 Asn Ala Ile Gln Arg Phe Phe Ala Tyr His Met Ile Glu Thr Tyr Gly 70 Cys Asp Tyr Ser Thr Ser Gly Leu Ser Phe Asp Thr Leu His Ser Lys 85 90 Leu Lys Ala Phe Leu Glu Leu Arg Thr Val Asp Gly Pro Arg His Asp 105 Thr Tyr Ile Leu Tyr Tyr Ser Gly His Thr His Gly Thr Gly Glu Trp 120 Ala Leu Ala Gly Gly Asp Thr Leu Arg Leu Asp Thr Leu Ile Glu Trp 135 140 Trp Arg Glu Lys Asn Gly Ser Phe Cys Ser Pro Pro Tyr Tyr Arg

<210> 1127 <211> 76 <212> PRT <213> Homo sapiens

<210> 1128 <211> 140 <212> PRT <213> Homo sapiens

<400> 1128 Met Gly Ala Gly Leu Ala Val Val Pro Leu Met Gly Leu Leu Glu Ser 5 10 Ile Ala Val Ala Lys Ala Phe Ala Ser Gln Asn Asn Tyr Arg Ile Asp 20 25 Ala Asn Gln Glu Leu Leu Ala Ile Gly Leu Thr Asn Met Leu Gly Ser 40 45 Leu Val Ser Ser Tyr Pro Val Thr Gly Ser Phe Gly Arg Thr Ala Val 55 60 Asn Ala Gln Ser Gly Val Cys Thr Pro Ala Glu Gly Leu Val Thr Glu 70 75 Val Leu Val Leu Leu Ser Leu Asp Tyr Leu Thr Ser Leu Phe Tyr Tyr 90 Ile Pro Lys Ser Ala Leu Ala Ala Val Ile Ile Met Ala Val Ala Pro 100 105 Leu Phe Asp Thr Lys Ile Phe Arg Thr Leu Trp Arg Val Lys Arg Leu 115 120 Asp Leu Leu Ser Leu Ser Val Thr Phe Leu Leu Cys 135

<210> 1129 <211> 116 <212> PRT <213> Homo sapiens

<400> 1129 Met Ala Glu Ala Phe Pro Phe Phe Ser Pro Phe Leu Gly Trp Leu Gly 10 Val Phe Leu Thr Gly Ser Asp Thr Ser Ser Asn Ala Leu Phe Ser Ser 20 25 Leu Gln Ala Thr Thr Ala His Gln Ile Gly Val Ser Asp Val Leu Leu 40 Val Ala Ala Asn Thr Ser Gly Gly Val Thr Gly Lys Met Ile Ser Pro 55 Gln Ser Ile Ala Val Ala Cys Ala Ala Thr Gly Leu Val Gly Lys Glu 70 75 Ser Asp Leu Phe Arg Phe Thr Leu Lys His Ser Leu Phe Phe Ala Thr 85 90 Ile Val Gly Leu Ile Thr Leu Ala Gln Ala Tyr Trp Phe Thr Gly Met Leu Val His \* 115

<210> 1130 <211> 81 <212> PRT <213> Homo sapiens

<400> 1130
Met Asn Lys Leu Leu Val Ala Ala Thr Ala Ile Leu Phe Ser Leu Gly
1 5 10 15

<210> 1131 <211> 46 <212> PRT <213> Homo sapiens

<210> 1132 <211> 46 <212> PRT <213> Homo sapiens

<210> 1133 <211> 87 <212> PRT <213> Homo sapiens

50 55 60

Glu Gln Ala Arg Glu Ser Leu Leu Ser Thr Phe Arg Ile Arg Pro Arg
65 70 75 80

Gly Arg Tyr Val Ser Tyr \*
85 86

<210> 1134 <211> 57 <212> PRT <213> Homo sapiens

<210> 1135 <211> 57 <212> PRT <213> Homo sapiens

<210> 1136 <211> 105 <212> PRT <213> Homo sapiens

Ala Val Pro Asp Asp Gly Thr Asp Leu Leu Pro Gln Gly Met Arg Thr 65 70 75 80

Ala Cys Thr Thr Arg Arg Ile Phe Lys Tyr Asn Thr Glu Pro Phé Ala 85 90 95

Ala Phe Leu Phe Ile Leu Asn Met \* 100 104

<210> 1137 <211> 52 <212> PRT <213> Homo sapiens

<210> 1138 <211> 187 <212> PRT <213> Homo sapiens

180

<400> 1138 Met Gln Pro Ile Val Ala Lys Ala Leu Val Leu Leu Glu Val His 1 5 Pro Leu Gln Asp Gln Ala Glu Ser Gly Arg Leu Gly His Val His Leu 25 Leu Cys Ala Pro Ala Ala Leu Gln His Ala Leu Arg Gly Ile Thr Leu 40 45 His Asn Gly His His Gln Ala Asp His Leu Pro Asp Leu Met His His Glu Ala Leu Ala Leu His Pro Asp His Arg Lys Leu Gln Ala Leu Pro 70 75 His Lys Gly Phe Leu Ala Val His Leu Gln Asp Val Ala Ala Gly Thr 85 90 Gly Ile Leu Arg Pro Leu Leu Arg Gly Glu Ile Val Glu Val Val Arg 105 Ala Leu Val Ala Gly Gln Glu Pro Val Asp Leu Leu Gln Arg Leu Gly 120 125 Ala Gln Ala Val Gly Leu Ile Leu Asn Val Pro Val Leu Val Arg Lys 135 140 Gly Lys Arg Gly Gln Gln Val Ala Ile Gly Pro Gly Ile Thr Ser Val 150 155 Leu Gly Val Lys Pro Ala Arg Asp Pro Leu Gln Ser Gln Asn Pro Asn 165 170 Val Arg Gly Lys Val Ala Val Asp Leu Phe \*

<210> 1139 <211> 109 <212> PRT <213> Homo sapiens

<400> 1139 Met Trp Gln Lys Ser Leu Leu Ile Leu Ser Phe Arg Val Ser Phe Pro 10 Leu Phe Leu Thr Tyr Asn Tyr Lys Leu Leu Ser Ile Arg Arg Thr Arg 25 20 Pro Leu Ser Ser Phe Phe Ser Lys Leu Leu Gln Ile Ala Val Asn Ser 40 Ile Asn Ser Leu Phe Ser Ala Gly Lys Val Ala Phe Ser Lys His Val 55 60 Cys Leu Leu Pro Gly Gly Leu Lys Ser Met Ile Tyr Cys Ser Ser Met 70 75 Cys Leu Lys Gln Leu Leu Arg Ser Phe Lys Gln Glu Ser Ser Lys Gly 85 90 Ser Val Leu Ile Met Val Leu Val Phe Leu Gln Ile 100 105

<210> 1140 <211> 83 <212> PRT <213> Homo sapiens

<210> 1141 <211> 58 <212> PRT <213> Homo sapiens

Ser Ser Lys Phe Ser Trp Lys Ser Phe Ser Lys Leu Gln Phe Leu Leu 35 40 Leu Leu Lys Phe Arg Tyr Met Cys Ile \* 55

<210> 1142 <211> 46 <212> PRT <213> Homo sapiens

<400> 1142 Met Asn Pro His Leu Gly Val Phe Leu Val Leu Val Ser Phe Phe Leu 5

Ser Leu Leu Asp Ser Gln Leu His Ser Trp Ile Val Leu His Asn Ser 20 25 Pro Ser Ser Arg Met Trp Lys Ser Ile Ile Phe Phe Leu \*

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<210> 1143 <211> 58 <212> PRT <213> Homo sapiens

<400> 1143

Met Leu Trp Ala Leu Ile Arg Ala Ala Leu Ala Gln Leu His Thr Glu 1 . 5 10 Glu Pro Lys Lys Arg Lys Glu Glu Lys Met Ser Pro Ala Leu Ser Pro 25 Pro Leu Pro Ser Val Pro Ile Ser Leu Gly Gln Asn Asn Arg Lys Arg 40 Arg Ser His Leu Ser Leu Leu Leu Gln \* 55

<210> 1144 <211> 147 <212> PRT <213> Homo sapiens

<400> 1144

Met Ala Tyr Thr Met Ile Pro Val Leu His Phe Phe Cys Cys Glu Thr 10 Ser Ser Leu Val Arg Thr Lys Val Val Trp Glu Ala Ile Asn Met Val Phe Ala Lys Ser Met Asn Gly Gly Pro Asp Arg Cys Ile Ala Val Arg 35 Gln Val Lys Phe Leu Phe Arg Lys Val Ser Phe Ser Glu Lys Ile Asp 55 His Cys Pro Leu His Asp Gly Asn Ile Leu Leu Pro Gly Pro Trp Glu 70 75 Met Ala Pro Tyr Trp Gly Leu Asn Ile Ser Leu Cys His Leu Gln Phe

<210> 1145 <211> 103 <212> PRT <213> Homo sapiens

<400> 1145 Met Ala Trp Ile Pro Leu Phe Leu Gly Val Leu Ala Tyr Cys Thr Gly 10 Ser Val Ala Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser 20 25 Pro Gly Lys Thr Ala Ser Ile Thr Cys Ser Gly Asp Lys Leu Gly Asp 35 40 45 Lys Tyr Ala Ser Trp Tyr Gln Gln Lys Ala Gly Gln Ser Pro Val Leu 55 60 Val Ile Tyr Glu Asp Ser Arg Arg Pro Ser Gly Ile His Lys Arg Phe 70 Tyr Gly Ser Asn Ser Gly Thr Thr Ala Thr Leu Thr Ile Ser Gly Thr 85 90 Gln Ala Met Asp Glu Gly \* 100 102

<210> 1146 <211> 77 <212> PRT <213> Homo sapiens

<210> 1147 <211> 118 <212> PRT

## <213> Homo sapiens

<400> 1147 Met Asn Pro Ser Ala Ser Leu Val Cys Leu Leu Phe Ala Phe Ser Ser 10 Cys Arg Ile Trp Ser Val Leu Cys Gln Leu Cys Val Pro Ser Pro Trp 25 20 Pro Ser Pro Leu Cys Leu Cys Pro Gln Thr Asp Val Ala Pro Ile Cys . 35 Ala Val Gln Pro Ser Leu Phe Cys Leu Gly Ser Arg Glu Pro Leu Trp 55 60 Thr Val Leu Val Gly Ser Cys Pro Leu Arg Ala Phe Thr Asn Leu Ser 75 Val Arg Pro Pro Pro Gly His His Ser Ile His Leu Leu Thr Trp Leu 90 Ala Ser Ser Ser Ala Ala Ala Thr Thr Ala Ala Ser Thr Ala Ser Gly 105 100 Ala Pro His Ser Val \* 115 117

<210> 1148 <211> 399 <212> PRT <213> Homo sapiens

<400> 1148 Met Trp Ala Ala Val Gly Gly Phe Leu Phe Ala Pro Arg Cys Phe Leu 10 Leu Pro Trp Pro Leu Arg Ala Pro Leu Ser Ser Leu Phe Val Leu Pro 25 20 Arg Leu Leu Leu Trp Pro Ile Pro Tyr Pro Val Leu Ala Ser Val Cys 40 Pro Cys Val Pro Gly Gly Arg Phe Phe Gly Pro Leu Tyr Pro Arg Asp 55 Leu Arg Leu Leu Arg Cys Val Pro Gly Glu Leu Thr Gly Ala Ala Pro 75 70 Arg Thr Leu Pro Gly Cys Asp Leu Asn Cys Leu Gly Leu Gly Arg Glu 85 Ala Ala Val Pro Arg Leu Leu Arg Leu Thr Arg Asp Pro Ala Arg Pro 105 Ser Cys Arg Thr Leu Gly Val His Ala Val Pro Arg Arg Ala Phe Gly 125 120 Phe Tyr Ala Val Pro Arg Arg Asp Pro Arg Phe Tyr Ala Val Pro Arg 140 135 Arg Val Pro Arg Leu Tyr Ala Val Pro His Pro Ala Leu Arg Val Tyr 155 150 Ala Val Pro Arg Arg Thr Phe Arg Val Tyr Ala Val Pro His Pro Ala 170 165 Leu Arg Val Tyr Ala Val Pro Arg Arg Ala Leu Gly Leu Tyr Val Val 185 Pro Gln Arg Ala Leu Arg Val Tyr Ala Val Pro Arg Arg Thr Phe Arg 205 200 195 Val Tyr Ala Val Pro His Pro Ala Leu Arg Leu Tyr Ala Val Ala Arg 220 215 Arg Ala Leu Arg Phe Tyr Val Val Pro Gln Arg Ala Leu Arg Val Tyr

230 235 Ala Val Pro Arg Leu Pro Gly Arg Ala Thr Phe Arg Asp Leu Arg Pro 245 250 Leu Leu Arg Leu Leu Pro Leu Gly Gly Arg Arg Val Leu Gly Leu 260 265 Pro Leu Ser Leu Pro Ala Gly Leu Ala Leu Arg Ala Ala Ser Arg Ala 280 285 Arg Pro Leu His Leu Leu Arg Ala Ala Cys Leu Leu Pro Ser Leu Gly 295 His Leu Gly Thr Leu Arg Gly Ser Leu Leu Gly Leu Ser Leu Ala Val 310 315 Arg Pro Pro Arg Ala Pro Arg Leu Gly Leu Arg Ala Pro Val Trp Pro 325 330 Ala Ala Ser Cys Leu Leu His Ser Gly Gly Ala Pro Arg Arg Leu Leu 340 345 Cys Ala Leu Ala Pro Leu Arg Pro Phe Cys Leu Pro Ala Arg Gly Ser 360 365 Trp Leu Ser Gly Ser Leu Ser Gln Arg Arg Gly Asp Leu Arg Arg Pro . 375 Leu Gly Thr Arg Gly Asn Pro Leu Arg Leu Arg Gly Leu Gly His 395

<210> 1149 <211> 67 <212> PRT <213> Homo sapiens

<400> 1149

 Met
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 Ser
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<210> 1150 <211> 70 <212> PRT <213> Homo sapiens

Leu Arg Lys Ala Leu \* 65 69

<210> 1151

<211> 48

<212> PRT

<213> Homo sapiens

<400> 1151

<210> 1152

<211> 64

<212> PRT

<213> Homo sapiens

<400> 1152

<210> 1153

<211> 61

<212> PRT

<213> Homo sapiens

<400> 1153

<210> 1154

<211> 75

<212> PRT <213> Homo sapiens

<400> 1154

<210> 1155 <211> 68 <212> PRT <213> Homo sapiens

<400> 1155

 Met
 Met
 Ala
 Lys
 Ser
 Val
 Arg
 Phe
 Cys
 Tyr
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<210> 1156 <211> 60 <212> PRT <213> Homo sapiens

<210> 1157
<211> 776
<212> PRT

## <213> Homo sapiens

<400> 1157 Met Leu Phe Ile Val Thr Ala Leu Leu Cys Cys Gly Leu Cys Asn Gly 10 Val Leu Ile Glu Glu Thr Glu Ile Val Met Pro Thr Pro Lys Pro Glu 20 25 Leu Trp Ala Glu Thr Asn Phe Pro Leu Ala Pro Trp Lys Asn Leu Thr 40 Leu Trp Cys Arg Ser Pro Ser Gly Ser Thr Lys Glu Phe Val Leu Leu 55 Lys Asp Gly Thr Gly Trp Ile Ala Thr Arg Pro Ala Ser Glu Gln Val 70 75 Arg Ala Ala Phe Pro Leu Gly Ala Leu Thr Gln Ser His Thr Gly Ser 90 Tyr His Cys His Ser Trp Glu Glu Met Ala Val Ser Glu Pro Ser Glu 105 Ala Leu Glu Leu Val Gly Thr Asp Ile Leu Pro Lys Pro Val Ile Ser 120 125 Ala Ser Pro Thr Ile Arg Gly Gln Glu Leu Gln Leu Arg Cys Lys Gly 140 135 Trp Leu Ala Gly Met Gly Phe Ala Leu Tyr Lys Glu Gly Glu Gln Glu 150 155 Pro Val Gln Gln Leu Gly Ala Val Gly Arg Glu Ala Phe Phe Thr Ile 170 Gln Arg Met Glu Asp Lys Asp Glu Gly Asn Tyr Ser Cys Arg Thr His 180 185 Thr Glu Lys Arg Pro Phe Lys Trp Ser Glu Pro Ser Glu Pro Leu Glu 200 Leu Val Ile Lys Glu Met Tyr Pro Lys Pro Phe Phe Lys Thr Trp Ala 215 220 Ser Pro Val Val Thr Pro Gly Ala Arg Val Thr Phe Asn Cys Ser Thr 230 235 Pro His Gln His Met Ser Phe Ile Leu Tyr Lys Asp Gly Ser Glu Ile 245 250 Ala Ser Ser Asp Arg Ser Trp Ala Ser Pro Gly Ala Ser Ala Ala His 260 265 Phe Leu Ile Ile Ser Val Gly Ile Gly Asp Gly Gly Asn Tyr Ser Cys 280 Arg Tyr Tyr Asp Phe Ser Ile Trp Ser Glu Pro Ser Asp Pro Val Glu 295 300 Leu Val Val Thr Glu Phe Tyr Pro Lys Pro Thr Leu Leu Ala Gln Pro 310 315 Gly Pro Val Val Phe Pro Gly Lys Ser Val Ile Leu Arg Cys Gln Gly 330 325 Thr Phe Gln Gly Met Arg Phe Ala Leu Leu Gln Glu Gly Ala His Val 345 Pro Leu Gln Phe Arg Ser Val Ser Gly Asn Ser Ala Asp Phe Leu Leu 360 His Thr Val Gly Ala Glu Asp Ser Gly Asn Tyr Ser Cys Ile Tyr Tyr 375 Glu Thr Thr Met Ser Asn Arg Gly Ser Tyr Leu Ser Met Pro Leu Met 390 395 Ile Trp Val Thr Asp Thr Phe Pro Lys Pro Trp Leu Phe Ala Glu Pro 405 410 Ser Ser Val Val Pro Met Gly Gln Asn Val Thr Leu Trp Cys Arg Gly 425 430 Pro Val His Gly Val Gly Tyr Ile Leu His Lys Glu Gly Glu Ala Thr

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440
       435
Ser Met Gln Leu Trp Gly Ser Thr Ser Asn Asp Gly Ala Phe Pro Ile
                    455
                                       460
Thr Asn Ile Ser Gly Thr Ser Met Gly Arg Tyr Ser Cys Cys Tyr His
                 470
                                    475
Pro Asp Trp Thr Ser Ser Ile Lys Ile Gln Pro Ser Asn Thr Leu Glu
             485
                             490
Leu Leu Val Thr Gly Leu Leu Pro Lys Pro Ser Leu Leu Ala Gln Pro
                          505
         500
Gly Pro Met Val Ala Pro Gly Glu Asn Met Thr Leu Gln Cys Gln Gly
                        520
                                         525
    515
Glu Leu Pro Asp Ser Thr Phe Val Leu Leu Lys Glu Gly Ala Gln Glu
                                      540
                   535
Pro Leu Glu Gln Gln Arg Pro Ser Gly Tyr Arg Ala Asp Phe Trp Met
                                   555
                 550
Pro Ala Val Arg Gly Glu Asp Ser Gly Ile Tyr Ser Cys Val Tyr Tyr
             565
                               570
                                       575
Leu Asp Ser Thr Pro Phe Ala Ala Ser Asn His Ser Asp Ser Leu Glu
          580 585
Ile Trp Val Thr Asp Lys Pro Pro Lys Pro Ser Leu Ser Ala Trp Pro
               600
                                           605
Ser Thr Met Phe Lys Leu Gly Lys Asp Ile Thr Leu Gln Cys Arg Gly
                     615
Pro Leu Pro Gly Val Glu Phe Val Leu Glu His Asp Gly Glu Glu Ala
                 630
                                    635
Pro Gln Gln Phe Ser Glu Asp Gly Asp Phe Val Ile Asn Asn Val Glu
              645
                                650
Gly Lys Gly Ile Gly Asn Tyr Ser Cys Ser Tyr Arg Leu Gln Ala Tyr
                            665
                                              670
Pro Asp Ile Trp Ser Glu Pro Ser Asp Pro Leu Glu Leu Val Gly Ala
                        680
                                           685
Ala Gly Pro Val Ala Gln Glu Cys Thr Val Gly Asn Ile Val Arg Ser
                                       700
                     695
Ser Leu Ile Val Val Val Val Ala Leu Gly Val Val Leu Ala Ile
                 710
                                    71.5
Glu Trp Lys Lys Trp Pro Arg Leu Arg Thr Arg Gly Ser Glu Thr Asp
              725
                                730
Gly Arq Asp Gln Thr Ile Ala Leu Glu Glu Cys Asn Gln Glu Gly Glu
                            745
Pro Gly Thr Pro Ala Asn Ser Pro Ser Ser Thr Ser Gln Arg Ile Ser
      755 760
Val Glu Leu Pro Val Pro Ile *
   770
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<210> 1158 <211> 80 <212> PRT <213> Homo sapiens

Asn Thr Arg Arg Val Glu Phe Trp Asn Gln Met Lys Leu Leu Gly Glu
50 55 60

Ser Val Gly Ile Phe Gly Thr Ala Val Ile Leu Ala Thr Asp Gly \*
65 70 75 79

<210> 1159 <211> 132 <212> PRT <213> Homo sapiens

<400> 1159 Met Ser Ser Gly Thr Glu Leu Leu Trp Pro Gly Ala Ala Leu Leu Val 10 Leu Leu Gly Val Ala Ala Ser Leu Cys Val Arg Cys Ser Arg Pro Gly 25 Ala Lys Arg Ser Glu Lys Ile Tyr Gln Gln Arg Ser Leu Arg Glu Asp 40 Gln Gln Ser Phe Thr Gly Ser Arg Thr Tyr Ser Leu Val Gly Gln Ala Trp Pro Gly Pro Leu Ala Asp Met Ala Pro Thr Arg Lys Asp Lys Leu 70 75 Leu Gln Phe Tyr Pro Ser Leu Glu Asp Pro Ala Ser Ser Arg Tyr Gln 85 90 Asn Phe Ser Lys Gly Ser Arg His Gly Ser Glu Glu Ala Tyr Ile Asp 105 Pro Thr Ala Ile Lys Tyr Phe Leu Thr Gln Ala Thr Ala Ser Ile Ile Leu Leu Ile Ala 130 132

<210> 1160 <211> 167 <212> PRT <213> Homo sapiens

<400> 1160 Met Val Gly Leu Gly Gly Met Ser Gln Leu Leu Leu Ala Ser Leu Leu 5 10 Pro Pro Val Pro Gln Gly Ser Pro Thr Arg Arg Lys Leu Pro Ala Ser 25 Leu Leu Val Ser Thr Ala Leu Ile Ser Pro Val Cys Val Arg Gly Trp 40 Met Trp Gln Asn Leu Gln Asn Arg Ile His Gly Ser His Thr Ser Ala 55 Arg Arg Val Pro Ser Leu Pro Gly Ala Gly Gln Val Gly Val Arg Trp 70 75 Glu Ala Gly Pro Ala Cys Arg Thr Gln Pro Ser Pro Gln Asn Leu Ala 85 90 Pro Arg Pro His Pro Ser Ala Ala Gln Leu Ile Glu Asn Ala Ala Leu 100 105 Arg Ser Ala Met Ser Gly Glu Arg Leu Phe Pro Glu Gly Gln Glu His 120 . 125 Leu Gly Pro Leu Val Ala Pro Arg Val Pro Met Gly Gly Ala Leu Cys

<210> 1161 <211> 84 <212> PRT

<213> Homo sapiens

<400> 1161 Met Ala Asn Leu Leu Leu Ile Val Pro Ile Leu Ile Ala Met Ala 5 1.0 Phe Leu Met Leu Thr Glu Arg Lys Ile Leu Gly Tyr Ile Gln Leu Arg 20 25 Lys Gly Pro Asn Val Val Gly Pro Tyr Gly Leu Leu Gln Pro Phe Ala 40 Asp Ala Ile Lys Leu Phe Thr Lys Glu Pro Leu Lys Pro Ala Thr Ser 50 55 60 Ala Ile Thr Leu Tyr Ile Thr Ala Pro Thr Leu Ala Leu Thr Ile Ala 65 70 Leu Leu Leu 83

<210> 1162 <211> 80 <212> PRT <213> Homo sapiens

<210> 1163 <211> 71 <212> PRT <213> Homo sapiens

<400> 1163
Met Tyr Gly Leu Lys Ile Leu Ser His Leu Trp Val Leu Leu Ile Leu
1 5 10 15

 Ser Leu Leu Leu Leu Phe Leu Arg Lys
 Ser Phe Lys
 Phe Lys
 Phe Tyr
 Ala Val Ser

 20
 25
 30

 Phe Val Cys
 Phe Ala Phe Val Ala Phe Trp Asn Asn Leu Gln Lys
 Ile Gln Lys
 Ile Ala Gln Ala Asn Val Ile Gln Ser
 Pro Ser Ile Phe Pro Cys
 Ser

 50
 55
 60

 Ser Ser Thr Phe Lys
 Leu \*

 65
 70

<210> 1164 <211> 56 <212> PRT <213> Homo sapiens

<210> 1165 <211> 97 <212> PRT <213> Homo sapiens <221> misc\_feature <222> (1)...(97) <223> Xaa = any amino acid or nothing

<400> 1165 Met Lys Met Leu Cys Gly Leu Leu Arg Thr Val Gln Gly Val Arg Phe 5 10 15 Pro Gln Leu Thr Arg Ile His Gly Pro Ser Thr Gln Gly His Gln Leu 25 Leu Leu Trp Val Gly Val Leu Gln Val Gly Xaa Ser Ser Leu Gly 40 Leu Gln Asn Asp Leu Met Gly Pro Ser Leu Gly Arg Gly Pro Pro Pro 55 Leu Ala Ala Ser Thr Arg Cys Arg His Val Ala Gln Leu Gly Val Gly 70 75 Leu Ser Lys Thr Trp Gln Pro Ser Thr His Gly Ile Ala Ser Ala Pro 85 90 •

<210> 1166 <211> 48 <212> PRT <213> Homo sapiens

<210> 1167 <211> 274 <212> PRT <213> Homo sapiens

<400> 1167 Met Glu Ala Pro Leu Ser His Leu Glu Ser Arg Tyr Leu Pro Ala His 1.0 Phe Ser Pro Leu Val Phe Phe Leu Leu Ser Ile Met Met Ala Cys 20 25 Cys Leu Val Ala Phe Phe Val Leu Gln Arg Gln Pro Arg Cys Trp Glu 40 Ala Ser Val Glu Asp Leu Leu Asn Asp Gln Val Thr Leu His Ser Ile 55 Arg Pro Arg Glu Glu Asn Asp Leu Gly Pro Ala Gly Thr Val Asp Ser 70 75 Ser Gln Gly Gln Gly Tyr Leu Glu Glu Lys Ala Ala Pro Cys Cys Pro 85 90 Ala His Leu Ala Phe Ile Tyr Thr Leu Val Ala Phe Val Asn Ala Leu 105 Thr Asn Gly Met Leu Pro Ser Val Gln Thr Tyr Ser Cys Leu Ser Tyr 120 125 Gly Pro Val Ala Tyr His Leu Ala Ala Thr Leu Ser Ile Val Ala Asn 135 140 Pro Leu Ala Ser Leu Val Ser Met Phe Leu Pro Asn Arg Ser Leu Leu 155 150 Phe Leu Gly Val Leu Ser Val Leu Gly Thr Cys Phe Gly Gly Tyr Asn 170 165 Met Ala Met Ala Val Met Ser Pro Cys Pro Leu Leu Gln Gly His Trp 180 185 190 Gly Gly Glu Val Leu Ile Val Ser Ile Arg Pro Val Ala Ser Trp Val 200 Leu Phe Ser Gly Cys Leu Ser Tyr Val Lys Val Met Leu Gly Val Val 215 220 Leu Arg Asp Leu Ser Arg Ser Ala Leu Leu Trp Cys Gly Ala Ala Val 230 235 Gln Leu Gly Ser Leu Leu Gly Ala Leu Leu Met Phe Pro Leu Val Asn 250 Val Leu Arg Leu Phe Ser Ser Ala Asp Phe Cys Asn Leu His Cys Pro 265 Ala \*

667

<210> 1168 <211> 230 <212> PRT <213> Homo sapiens

<400> 1168 Met Arg Ile Cys Asn Leu Ile Ser Met Met Leu Leu Cys His Trp 10 Asp Gly Cys Leu Gln Phe Leu Val Pro Met Leu Gln Asp Phe Pro Arg . 25 2.0 Asn Cys Trp Val Ser Ile Asn Gly Met Val Asn His Ser Trp Ser Glu 40 Leu Tyr Ser Phe Ala Leu Phe Lys Ala Met Ser His Met Leu Cys Ile 60 Gly Tyr Gly Arg Gln Ala Pro Glu Ser Met Thr Asp Ile Trp Leu Thr 70 75 Met Leu Ser Met Ile Val Gly Ala Thr Cys Tyr Ala Met Phe Ile Gly 90 85 His Ala Thr Ala Leu Ile Gln Ser Leu Asp Ser Ser Arg Arg Gln Tyr 100 105 110 Gln Glu Lys Tyr Lys Gln Val Glu Gln Tyr Met Ser Phe His Lys Leu 120 Pro Ala Asp Phe Arg Gln Lys Ile His Asp Tyr Tyr Glu His Arg Tyr 135 140 Gln Gly Lys Met Phe Asp Glu Asp Ser Ile Leu Gly Glu Leu Asn Gly 155 150 Pro Leu Arg Glu Glu Ile Val Asn Phe Asn Cys Arg Lys Leu Val Ala 170 165 Ser Met Pro Leu Phe Ala Asn Ala Asp Pro Asn Phe Val Thr Ala Met 185 Leu Thr Lys Leu Lys Phe Glu Val Phe Gln Pro Gly Asp Tyr Ile Ile 205 200 Pro Arg Arg His His Arg Glu Glu Asp Val Leu His Pro Ala Arg Arg 210 215 Gly Gln Arg Ala His \*

<210> 1169 <211> 213 <212> PRT <213> Homo sapiens

85 90 Val Leu Met Ala Gly Ala Leu Ala Val Leu Ser Glu Gly Leu Gln Gly 100 105 Leu Asp Asp Glu Ala His Val Val Leu Ile Asp Val Glu Pro Gln Gln 120 125 Pro Gln Ala Ala Arg Gly Ala Ala Ala His Asp Val Gln Glu Leu Gln 135 Arg Leu Ala Tyr Gln Val Val Gly Phe Val Val Leu Thr Ala Gln 145 150 1.55 Glu Val Leu Gln Val Pro Val Val Val Leu Thr Gln Gln Leu Gln Lys 165 170 Ala Gln Asp Gly Leu His Asp Glu His Gly Cys Ala His Leu Thr Ala 180 185 Leu His Thr Phe Ala His Leu Val Pro Pro Ala Gln Ala Gly Ala Gln 195 200 Arg Val Ala Gly 210 212

<210> 1170 <211> 51 <212> PRT

<213> Homo sapiens

<210> 1171 <211> 157 <212> PRT <213> Homo sapiens

<400> 1171 Met Leu Val Pro Leu Asn Leu Cys Leu Gln Ser Thr Leu Ala Leu Val 5 10 Ser Leu Pro Leu Pro Gly Ile Gly Arg Ala Phe Cys Glu Trp Leu Ser 20 25 Gly Thr Phe Lys Ala Arg Arg Gln Gly Pro Lys Ala Lys Arg Glu Leu 40 Trp Asp Val Pro Ser Pro Val Arg Gly Trp Pro Trp Gly Phe Arg Leu 55 Arg Gly Val Pro Gly Pro Val Ser Pro Ala Phe Gly Pro Phe Gly Glu Phe Gly Glu Glu Val Pro Thr Ala Arg Pro Gly Asp Val Arg Gly Ala 90 Ala Leu Thr Phe Ile Val Gly Val Ser Ser Glu Val Ser Val Gln Arg 105

<210> 1172 <211> 69 <212> PRT <213> Homo sapiens

<210> 1173 <211> 75 <212> PRT <213> Homo sapiens

<210> 1174 <211> 77 <212> PRT <213> Homo sapiens

<210> 1175 <211> 59 <212> PRT <213> Homo sapiens

<210> 1176 <211> 55 <212> PRT <213> Homo sapiens

<210> 1177 <211> 86 <212> PRT <213> Homo sapiens

 Ser Trp Val
 Arg Thr Ala
 Trp Met Leu Gly
 Ser Thr Ser Arg Thr Arg
 Trp Arg
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<210> 1178
< <211> 189
<212> PRT
<213> Homo sapiens

<400> 1178 Met Met Pro Leu Leu Ser Leu Ile Phe Ser Ala Leu Phe Ile Leu Phe 5 10 Gly Thr Val Ile Val Gln Ala Phe Ser Asp Ser Asn Asp Glu Arg Glu 25 20 Ser Ser Pro Pro Glu Lys Glu Glu Ala Gln Glu Lys Thr Gly Lys Thr 40 Glu Pro Ser Phe Thr Lys Glu Asn Ser Ser Lys Ile Pro Lys Lys Gly Phe Val Glu Val Thr Glu Leu Thr Asp Val Thr Tyr Thr Ser Asn Leu 70 75 Val Arg Leu Arg Pro Gly His Met Asn Val Val Leu Ile Leu Ser Asn 90 85 Ser Thr Lys Thr Ser Leu Leu Gln Lys Phe Ala Leu Glu Val Tyr Thr 105 1.00 Phe Thr Gly Ser Ser Cys Leu His Phe Ser Phe Leu Ser Leu Asp Lys 120 125 His Arg Glu Trp Leu Glu Tyr Leu Leu Glu Phe Ala Gln Asp Ala Ala 135 140 Pro Ile Pro Asn Gln Tyr Asp Lys His Phe Met Glu Arg Asp Tyr Thr 155 145 150 Gly Tyr Val Leu Ala Leu Asn Gly His Lys Lys Tyr Phe Cys Leu Phe 170 165 Lys Pro Gln Lys Thr Val Glu Glu Gly Gly Lys Pro \* 188 180 185

<210> 1179 <211> 55 <212> PRT <213> Homo sapiens

<210> 1180 <211> 81 <212> PRT <213> Homo sapiens

<400> 1180

 Met Ala Phe Ala Phe Leu Leu Ser Thr Leu Leu Asn His Tyr Leu Ala Cys Lys

 1
 5

 His Ser Ser Glu Leu Trp Leu Gln Ser Ser Leu Asn Asn Leu Gly Lys

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 Lys Lys Asp Lys Asp Lys Ala Tyr Ile Phe Thr Val Leu Ala Leu Lys His Ile

 35
 40

 Pro Gln Met Pro Leu Arg Ile Tyr Phe Val Leu Gly Gln Ser Trp Trp

 50

 Leu Met Pro Val Ile Pro Ala Ile Trp Glu Ala Glu Ala Arg Thr Ala

 65

<210> 1181 <211> 69 <212> PRT <213> Homo sapiens

<210> 1182 <211> 430 <212> PRT <213> Homo sapiens

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Ala Lys Val Val Lys Ala Ser Ser Pro Ser Tyr Leu Ala Glu Gly Lys
                    70
                                        75
Ile Arg Cys Leu Ala Gln Pro His Pro Gly Thr Gly Val Pro Arg Ala
                85
                                   90
Ala Ala Glu Leu Pro Leu Glu Ala Glu Lys Ile Lys Thr Gly Thr Gln
                               105
Lys Gln Ala Lys Thr Asp Met Ala Phe Lys Thr Ser Val Ala Val Glu
                                               125
                           120
Met Ala Gly Ala Pro Ser Trp Thr Lys Val Ala Glu Glu Gly Asp Lys
                       135
Pro Pro His Gly Pro Arg Cys Pro Asn His Ala Cys Gln Arg Leu Gly
                   150
                                      155
Gly Leu Ser Ala Pro Pro Trp Ala Lys Pro Glu Asp Arg Gln Thr Gln
                                   170
Pro Gln Pro His Gly His Val Pro Gly Lys Thr Thr Gln Gly Gly Pro
                               185
Cys Pro Ala Ala Cys Glu Val Gln Gly Met Leu Val Pro Pro Met Ala
                                               205
                           200
Pro Thr Gly His Ser Thr Cys Asn Val Glu Ser Trp Gly Asp Asn Gly
                       215
                                           220
Ala Thr Arg Ala Gln Pro Ser Met Pro Gly Gln Ala Val Pro Cys Gln
                   230
                                       235
Glu Asp Thr Val Gly Ser Leu Leu Ala Ser Leu Cys Ala Glu Val Ala
                                   250
Gly Val Leu Ala Ser Gln Glu Asp Leu Arg Thr Leu Leu Ala Lys Ala
                               265
           260
Leu Ser Gln Gly Glu Val Trp Ala Ala Leu Asn Gln Ala Leu Ser Lys
                           280
Glu Val Leu Gly Ala Thr Val Thr Lys Ala Leu Pro Gln Ser Met Leu
                                          300
                      295
Ser Met Ala Leu Val Lys Ala Leu Ser Trp Ser Glu Leu Arg Leu Thr
                                      315
                   310
Leu Ser Arg Ala Leu Ser Arg Gly Glu Leu Arg Ala Glu Leu Thr Lys
               325
                                   330
Val Met Gln Gly Lys Leu Ala Glu Val Leu Ser Lys Ala Leu Thr Glu
                                345
           340
Glu Glu Trp Val Ala Leu Ser Gln Ala Leu Cys Gln Gly Glu Leu Gly
                           360
                                               365
Ala Leu Leu Ser Gln Ser Trp Cys Arg Val Ala Leu Arg Thr Gly Thr
                                           380
                       375
Ile Leu Pro Lys Ala Ala Ser Lys Ser Thr Gly Ser Gly Val Thr Lys
                    390
                                       395
Thr Pro Ala Leu Val Lys Val Ala Cys Arg Arg Ser Pro Ser Ala Ala
                                  410
                405
Trp Gly Pro Ser Leu Gly Pro Val Arg Pro Gln Thr Ser Lys
                                425
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<210> 1183
<211> 53
<212> PRT
<213> Homo sapiens
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20 25 30

Ser Thr Ser Pro Pro Gly Ser Met Phe Phe Ser Ser Pro Pro Ser Arg
35 40 45

Gly Ile Pro Ala \*
50 52

<210> 1184 <211> 56 <212> PRT <213> Homo sapiens

<210> 1185 <211> 294 <212> PRT <213> Homo sapiens

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<400> 1185 Met Pro Tyr Val Thr Glu Ala Thr Arg Val Gln Leu Val Leu Pro Leu 10 Leu Val Ala Glu Ala Ala Ala Pro Ala Phe Leu Glu Ala Phe Ala 20 25 Ala Asn Val Leu Glu Pro Arg Glu His Ala Leu Leu Thr Leu Leu Leu 40 Val Tyr Gly Pro Arg Glu Gly Gly Arg Gly Ala Pro Asp Pro Phe Leu 55 60 Gly Val Lys Ala Ala Ala Ala Glu Leu Glu Arg Arg Tyr Pro Gly Thr Arg Leu Ala Trp Leu Ala Val Arg Ala Glu Ala Pro Ser Gln Val Arg 85 <sup>°</sup> 90 Leu Met Asp Val Val Ser Lys Lys His Pro Val Asp Thr Leu Phe Phe 100 105 Leu Thr Thr Val Trp Thr Arg Pro Gly Pro Glu Val Leu Asn Arg Cys 120 125 Arg Met Asn Ala Ile Ser Gly Trp Gln Ala Phe Phe Pro Val His Phe 135 140 Gln Glu Phe Asn Pro Ala Leu Ser Pro Gln Arg Ser Pro Pro Gly Pro 150 155 Pro Gly Ala Gly Pro Asp Pro Pro Ser Pro Pro Gly Ala Asp Pro Ser 170 Arg Gly Ala Pro Ile Gly Gly Arg Phe Asp Arg Gln Ala Ser Ala Glu 190 180 185 Gly Cys Phe Tyr Asn Ala Asp Tyr Leu Ala Ala Arg Ala Arg Leu Ala 200

<210> 1186 <211> 57 <212> PRT <213> Homo sapiens

<210> 1187 <211> 191 <212> PRT <213> Homo sapiens

<400> 1187 Met Asp Leu Asp Asn Ala Lys Tyr Ser Leu Leu Gly Phe Ala Leu Phe 5 10 Trp Val Val Gly Phe Phe Phe Val Cys Leu Phe Trp Phe Leu Val 25 Phe Leu Pro Trp Cys Lys Thr Val Glu Ser Cys Leu Phe Thr Gly Leu 40 ` Gly Ser Ile Glu Val Cys Val Ser Ser Val Arg Phe Leu Leu Arg Thr 55 60 Ile Cys Ile Phe Asn Asn Ser Thr Ser Ser Arg Pro Ser Arg Arg Asn 70 Glu Arg Gly Leu Val Ser Ser Pro Glu Leu Ala Leu Glu Cys Val His 85 90 Leu Ala Ala His Gly Leu Val Ala Leu Arg Gly Leu Ile Gln Leu Pro 105 Leu Gln Leu Pro Ala Val Gly Val Asp Ala Leu Gly Leu Leu Cys 120 125 Leu Leu Gln Leu Pro Leu Glu Leu Leu Asp Pro Gly Ile Ala Phe Leu 135 140 Cys Leu Leu Val Leu Leu Gly His Leu Ala Leu Val Leu His Leu

<210> 1188 <211> 216 <212> PRT <213> Homo sapiens

<400> 1188 Met Ser Pro Pro Leu Leu Leu Pro Leu Leu Leu Leu Leu Pro Leu 5 . 10 Leu Asn Val Glu Pro Ala Gly Ala Thr Leu Ile Arg Ile Pro Leu Arg 20 25 Gln Val His Pro Gly Arg Arg Thr Leu Asn Leu Leu Arg Gly Trp Gly 40 Lys Pro Ala Glu Leu Pro Lys Leu Gly Ala Pro Ser Pro Gly Asp Lys 55 Pro Ala Ser Val Pro Leu Ser Lys Phe Leu Asp Ala Gln Tyr Phe Gly 70 75 Glu Ile Gly Leu Gly Thr Pro Pro Gln Asn Phe Thr Val Ala Phe Asp 90 Thr Gly Ser Ser Asn Leu Trp Val Pro Ser Arg Arg Cys His Phe Phe 105 Ser Val Pro Cys Trp Phe His His Arg Phe Asn Pro Asn Ala Ser Ser 120 125 Ser Phe Lys Pro Ser Gly Thr Lys Phe Ala Ile Gln Tyr Gly Thr Gly 135 140 Arg Val Asp Gly Ile Leu Ser Glu Asp Lys Leu Thr Ile Gly Gly Ile 150 155 Lys Gly Ala Ser Val Ile Phe Gly Glu Ala Leu Trp Gly Ile Gln Pro . 165 170 Gly Ser Ser Leu Phe Pro Ala Pro Met Gly Tyr Trp Gly Leu Gly Phe 180 185 Pro Ile Leu Val Leu Trp Glu Gly Ile Ser Ala Pro Ala Gly Cys Thr 200 Gly Gly Ala Gly Ala Ile Gly 210

<210> 1189 <211> 176 <212> PRT <213> Homo sapiens

Ala Leu Ala Ala Val Pro Ser Met Thr Gln Leu Leu Gly Asp Pro 55 60 Gln Ala Gly Ile Arg Arg Asn Val Ala Ser Ala Leu Gly Asn Leu Gly 70 75 Rro Glu Gly Leu Gly Glu Glu Leu Leu Gln Cys Glu Val Pro Gln Arg 90 85 Leu Leu Glu Met Ala Cys Gly Asp Pro Gln Pro Asn Val Lys Glu Ala 100 1.05 Ala Leu Ile Ala Leu Arg Ser Leu Gln Gln Glu Pro Gly Ile His Gln 120 Val Leu Val Ser Leu Gly Ala Ser Glu Lys Leu Ser Leu Leu Ser Leu 130 135 140 Gly Asn Gln Ser Leu Pro His Ser Ser Pro Arg Pro Ala Ser Ala Lys 145 150 155 160 His Cys Arg Lys Leu Ile His Leu Leu Arg Pro Ala His Ser Met \* 165 170

<210> 1190 <211> 58 <212> PRT <213> Homo sapiens

<210> 1191 <211> 88 <212> PRT <213> Homo sapiens

<400> 1191 Met Gly Ile Cys Leu Thr Trp Lys Pro Pro Thr Gly Val Ser Val Ile 5 10 Leu Ile Leu Leu Ser Glu Leu His Met Lys Ser Pro Gly Arg Leu Lys . 20 25 30 Pro Lys Ser Ser Pro His Phe Ser Thr Val Leu Thr Pro Leu Thr Phe 35 40 Met Tyr Pro Gly Leu Ala Leu Leu His Ser Leu Tyr Trp His Trp Gln 55 60 Glu Asn Gly Glu Ile Leu Cys Arg Ala Ala Glu Pro Lys Phe Ala Gln 70 Glu Ser Lys Cys Thr Ile Tyr \* 85 87

<210> 1192 <211> 136 <212> PRT <213> Homo sapiens

<400> 1192

Met Val Cys Leu Arg Leu Pro Gly Gly Ser Cys Met Ala Val Leu Thr 10 Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala Leu Ala Gly Asp Thr 20 25 Arg Pro Arg Phe Leu Glu Tyr Ser Thr Ser Glu Cys His Phe Phe Asn 40 Gly Thr Glu Arg Val Arg Tyr Leu Asp Arg Tyr Phe His Asn Gln Glu 55 Glu Asn Val Arg Phe Asp Ser Asp Val Gly Glu Phe Arg Ala Val Thr 70 Glu Leu Gly Arg Pro Asp Ala Glu Tyr Trp Asn Ser Gln Lys Asp Leu 85 90 Leu Gly Thr Ala Arg Arg Thr Ser Trp Ser Arg Ser Gly Ala Gly Trp 105 Thr Thr Thr Ala Asp Thr Thr Thr Gly Leu Trp Arg Ala Ser Gln Cys 120 Ser Gly Glu Ser Ile Leu Arg \* 130

<210> 1193 <211> 99 <212> PRT

<213> Homo sapiens

<210> 1194 <211> 50 <212> PRT <213> Homo sapiens

<400> 1194

<210> 1195 <211> 58 <212> PRT <213> Homo sapiens

<210> 1196 <211> 132 <212> PRT <213> Homo sapiens

<400> 1196 Met Leu Pro Asn Ser Ser Ser Leu Trp Leu Val Met Arg Ile Leu Ile 1 5 Phe Cys Val Ile Pro Ala Gly Gly Val Leu Gly Ala Pro Thr Ala Ala 20 25 Gly Leu Arg Pro Thr Gly Asp Val Ala Leu Arg Arg Pro Ala Gly Ser 40 Val Glu Pro Ser Gly Ser Arg Gly Leu Arg Ala Ser Val Cys Gln Arg 55 Leu Ser Met Phe Leu Ala His Phe Leu Arg Gly His Phe Leu Trp Trp 70 75 Ile Leu Asp Gly Gln Arg Leu Gly Phe Pro Leu Ser Leu Ala Thr Trp 85 90 Asn Arg Arg Lys Lys Ser Leu Gln His Leu Leu His Lys His Val Leu 100 105 Pro Val Arg Arg His Ala Gly Pro Cys Arg Gly Pro Gln Thr Thr Ala 115 120 Arg Gly Pro Arg 130 132

<210> 1197 <211> 64

<212> PRT <213> Homo sapiens

<400> 1197

 Met
 Pro
 Tyr
 Leu
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 Ala
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 Leu
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<210> 1198 <211> 53 <212> PRT

<213> Homo sapiens

<400> 1198

 Met
 Leu
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 Glu
 Ala
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 Ser
 Leu
 Cys
 Ile
 Leu
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 Ile
 Ser
 Ile
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 Arg
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 Thr
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 Trp
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 Phe
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 Arg
 Pro
 Leu

<210> 1199

<211> 50

<212> PRT

<213> Homo sapiens

<221> misc\_feature

<222> (1)...(50)

<223> Xaa = any amino acid or nothing

<400> 1199

 Met Leu Arg Leu Gly Leu Cys Ala Ala Ala Leu Leu Cys Val Cys Arg

 1
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 Pro Gly Ala Val Arg Ala Asp Cys Trp Leu Ile Glu Gly Asp Lys Gly
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 25
 30

 Tyr Val Trp Leu Ala Ile Cys Asn Gln Asn Gln Pro Ala Tyr Glu Thr
 35
 40
 45

 Xaa Pro
 50

<210> 1200

<211> 49

<212> PRT

## <213> Homo sapiens

<210> 1201 <211> 46 <212> PRT <213> Homo sapiens

<210> 1202 <211> 332 <212> PRT <213> Homo sapiens

<400> 1202

Met Pro Leu Pro Trp Ser Leu Ala Leu Pro Leu Leu Leu Ser Trp Val 10 Ala Gly Gly Phe Gly Asn Ala Ala Ser Ala Arg His His Gly Leu Leu 20 Ala Ser Ala Arg Gln Pro Gly Val Cys His Tyr Gly Thr Lys Leu Ala 40 Cys Cys Tyr Gly Trp Arg Arg Asn Ser Lys Gly Val Cys Glu Ala Thr 55 Cys Glu Pro Gly Cys Lys Phe Gly Glu Cys Val Gly Pro Asn Lys Cys 75 Arg Cys Phe Pro Gly Tyr Thr Gly Lys Thr Cys Ser Gln Asp Val Asn 85 90 Glu Cys Gly Met Lys Pro Arg Pro Cys Gln His Arg Cys Val Asn Thr 105 His Gly Ser Tyr Lys Cys Phe Cys Leu Ser Gly His Met Leu Met Pro 120 Asp Ala Thr Cys Val Asn Ser Arg Thr Cys Ala Met Ile Asn Cys Gln 135 140 Tyr Ser Cys Glu Asp Thr Glu Glu Gly Pro Gln Cys Leu Cys Pro Ser 150 155 Ser Gly Leu Arg Leu Ala Pro Asn Gly Arg Asp Cys Leu Asp Ile Asp

170 165 Glu Cys Ala Ser Gly Lys Val Ile Cys Pro Tyr Asn Arg Arg Cys Val 185 180 Asn Thr Phe Gly Ser Tyr Tyr Cys Lys Cys His Ile Gly Phe Glu Leu 200 205 Gln Tyr Ile Ser Gly Arg Tyr Asp Cys Ile Asp Ile Asn Glu Cys Thr 215 220 Met Asp Ser His Thr Cys Ser His His Ala Asn Cys Phe Asn Thr Gln 230 235 Gly Ser Phe Lys Cys Lys Cys Lys Gln Gly Tyr Lys Gly Asn Gly Leu 245 250 Arg Cys Ser Ala Ile Pro Glu Asn Ser Val Lys Glu Val Leu Arg Ala 260 265 Pro Gly Thr Ile Lys Asp Arg Ile Lys Lys Leu Leu Ala His Lys Asn 280 285 Ser Met Lys Lys Lys Ala Lys Ile Lys Asn Val Thr Pro Glu Pro Thr 295 300 Arg Thr Pro Thr Pro Lys Val Asn Leu Gln Pro Phe Asn Tyr Glu Glu 310 315 Ile Val Ser Arg Gly Gly Asn Ser His Gly Gly \* 325 330 331

<210> 1203 <211> 825 <212> PRT

<213> Homo sapiens

<400> 1203

Met Ala Arg Leu Gly Asn Cys Ser Leu Thr Trp Ala Ala Leu Ile Ile 10 Leu Leu Pro Gly Ser Leu Glu Glu Cys Gly His Ile Ser Val Ser 20 25 Ala Pro Ile Val His Leu Gly Asp Pro Ile Thr Ala Ser Cys Ile Ile Lys Gln Asn Cys Ser His Leu Asp Pro Glu Pro Gln Ile Leu Trp Arg 55 Leu Gly Ala Glu Leu Gln Pro Gly Gly Arg Gln Gln Arg Leu Ser Asp 70 75 Gly Thr Gln Glu Ser Ile Ile Thr Leu Pro His Leu Asn His Thr Gln 90 Ala Phe Leu Ser Cys Cys Leu Asn Trp Gly Asn Ser Leu Gln Ile Leu 105 Asp Gln Val Glu Leu Arg Ala Gly Tyr Pro Pro Ala Ile Pro His Asn 120 Leu Ser Cys Leu Met Asn Leu Thr Thr Ser Ser Leu Ile Cys Gln Trp 135 140 Glu Pro Gly Pro Glu Thr His Leu Pro Thr Ser Phe Thr Leu Lys Ser 150 155 Phe Lys Ser Arg Gly Asn Cys Gln Thr Gln Gly Asp Ser Ile Leu Asp 170 Cys Val Pro Lys Asp Gly Gln Ser His Cys Cys Ile Pro Arg Lys His 185 Leu Leu Tyr Gln Asn Met Gly Ile Trp Val Gln Ala Glu Asn Ala 195 200 Leu Gly Thr Ser Met Ser Pro Gln Leu Cys Leu Asp Pro Met Asp Val 215 220

Val Lys Leu Glu Pro Pro Met Leu Arg Thr Met Asp Pro Ser Pro Glu Ala Ala Pro Pro Gln Ala Gly Cys Leu Gln Leu Cys Trp Glu Pro Trp Gln Pro Gly Leu His Ile Asn Gln Lys Cys Glu Leu Arg His Lys Pro Gln Arg Gly Glu Ala Ser Trp Ala Leu Val Gly Pro Leu Pro Leu Glu Ala Leu Gln Tyr Glu Leu Cys Gly Leu Leu Pro Ala Thr Ala Tyr Thr Leu Gln Ile Arg Cys Ile Arg Trp Pro Leu Pro Gly His Trp Ser Asp Trp Ser Pro Ser Leu Glu Leu Arg Thr Thr Glu Arg Ala Pro Thr Val Arg Leu Asp Thr Trp Trp Arg Gln Arg Gln Leu Asp Pro Arg Thr Val Gln Leu Phe Trp Lys Pro Val Pro Leu Glu Glu Asp Ser Gly Arg Ile Gln Gly Tyr Val Val Ser Trp Arg Pro Ser Gly Gln Ala Gly Ala Ile Leu Pro Leu Cys Asn Thr Thr Glu Leu Ser Cys Thr Phe His Leu Pro Ser Glu Ala Gln Glu Val Ala Leu Val Ala Tyr Asn Ser Ala Gly Thr Ser Arg Pro Thr Pro Val Val Phe Ser Glu Ser Arg Gly Pro Ala Leu Thr Arg Leu His Ala Met Ala Arg Asp Pro His Ser Leu Trp Val Gly Trp Glu Pro Pro Asn Pro Trp Pro Gln Gly Tyr Val Ile Glu Trp Gly Leu Gly Pro Pro Ser Ala Ser Asn Ser Asn Lys Thr Trp Arg Met Glu Gln Asn Gly Arg Ala Thr Gly Phe Leu Leu Lys Glu Asn Ile Arg Pro Phe Gln Leu Tyr Glu Ile Ile Val Thr Pro Leu Tyr Gln Asp Thr Met Gly Pro Ser Gln His Val Tyr Ala Tyr Ser Gln Glu Met Ala Pro Ser His Ala Pro Glu Leu His Leu Lys His Ile Gly Lys Thr Trp Ala Gln Leu Glu Trp Val Pro Glu Pro Pro Glu Leu Gly Lys Ser Pro Leu Thr His Tyr Thr Ile Phe Trp Thr Asn Ala Gln Asn Gln Ser Phe Ser Ala Ile Leu Asn Ala Ser Ser Arg Gly Phe Val Leu His Gly Leu Glu Pro Ala Ser Leu Tyr His Ile His Leu Met Ala Ala Ser Gln Ala Gly Ala Thr Asn Ser Thr Val Leu Thr Leu Met Thr Leu Thr Pro Ala Pro Thr Gly Arg Ile Pro Ser Gly Gln Val Ser Gln Thr Gln Leu Thr Ala Ala Trp Ala Pro Gly Cys Pro Gln Ser Trp Arg Arg Met Pro Ser Ser Cys Pro Ala Leu Ala Arg His Pro Ser Pro Ser Ser Gln Cys Trp Arg Arg Met Lys Arg Ser Arg Cys Pro Gly Ser Pro Ile Thr Ala Gln Arg Pro Val Ala Ser Pro Leu Trp Ser Arg Pro Met Cys Ser Arg Gly Thr Gln

695 700 690 Glu Gln Phe Pro Pro Ser Pro Asn Pro Ser Leu Ala Pro Ala Ile Arg 710 715 Ser Phe Met Gly Ser Cys Trp Ala Ala Pro Gln Ala Gln Gly Gln Gly 725 730 Thr Ile Ser Ala Val Thr Pro Leu Ser Pro Ser Trp Arg Ala Ser Pro 745 740 Pro Ala Pro Ser Pro Met Arg Thr Ser Gly Ser Arg Pro Ala Pro Trp 760 765 Gly Pro Leu Val Thr Pro Ser Pro Lys Ser Gln Glu Asp Asp Cys Val 770 775 780 Phe Gly Pro Leu Leu Asn Phe Pro Pro Ser Cys Arg Gly Ser Gly Ser 790 795 Met Gly Trp Arg Arg Trp Gly Ala Ser Arg Ala Ser Leu Gly Phe Pro 805 Ser Trp Ala Cys Leu Leu Lys Ala \* 820 824

<210> 1204 <211> 48

<212> PRT

<213> Homo sapiens

<400> 1204

<210> 1205

<211> 46

<212> PRT

<213> Homo sapiens

<400> 1205

 Met Gly Ser Phe Ser Phe Ile Leu Val Leu Phe Ile Asp Cys Leu Cys

 1
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 10
 15

 Met Phe Pro Ser Val Leu Val Gln Leu Leu Cys Thr Tyr Ser Ser Leu
 20
 25
 30

 Met Lys Thr Pro Leu Trp Leu Gln Ala Arg Ser Ser His \*
 35
 40
 45

<210> 1206

<211> 88

<212> PRT

<213> Homo sapiens

<400> 1206

 Met
 Gln
 Trp
 Cys
 Asn
 Leu
 Thr
 Ala
 Thr
 Ser
 Ala
 Phe
 Gln
 Ile
 Glu
 Ala

 Ile
 Leu
 Leu
 Pro
 Gln
 Leu
 Ser
 Pro
 Val
 Ala
 Gly
 Ile
 Thr
 Gly
 Thr
 Cys

 Ile
 Leu
 Pro
 Gln
 Leu
 Pro
 Val
 Glu
 Glu
 Thr
 Gly
 Pro
 Pro

 His
 Ala
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 Gly
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 Glu
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 Leu
 Thr
 Ser
 Gly
 Pro
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<210> 1207 <211> 186 <212> PRT <213> Homo sapiens

<400> 1207 Met Ile Leu Asn Lys Ala Leu Met Leu Gly Ala Leu Ala Leu Thr Thr 10 Val Met Ser Pro Cys Gly Gly Glu Asp Ile Val Ala Asp His Val Ala 25 Ser Tyr Gly Val Asn Leu Tyr Gln Ser Tyr Gly Pro Ser Gly Gln Tyr 35 40 Ser His Glu Phe Asp Gly Asp Glu Glu Phe Tyr Val Asp Leu Glu Arg 55 Lys Glu Thr Val Trp Gln Leu Pro Leu Phe Arg Arg Phe Arg Arg Phe 70 75 Asp Pro Gln Phe Ala Leu Thr Asn Ile Ala Val Leu Lys His Asn Leu 85 90 Asn Ile Val Ile Lys Arg Ser Asn Ser Thr Ala Ala Thr Asn Glu Val 100 105 Pro Glu Val Thr Val Phe Ser Lys Ser Pro Val Thr Leu Gly Gln Pro 120 Asn Thr Leu Ile Cys Leu Val Asp Asn Ile Phe Pro Pro Val Val Asn 135 140 Ile Thr Trp Leu Ser Asn Gly His Ser Val Thr Glu Gly Val Ser Glu 150 155 Thr Arg Pro Ser Ser Pro Lys Ser Asp His Phe Leu Leu Gln Asp Gln 165 170 Val Thr Ser Pro Ser Phe Pro Phe Glu \* 180

<210> 1208 <211> 46 <212> PRT <213> Homo sapiens

Pro Ser Ser Arg Met Trp Lys Ser Ile Ile Phe Phe Leu \* 35 40 45

<210> 1209 <211> 199 <212> PRT <213> Homo sapiens

<400> 1209

Met Ala Leu Leu Val Pro Leu Ala Leu Leu Val Ile Gln Ala His Leu 10 5 Val Leu Ser Val Gln Leu Glu Arg Val Val Thr Glu Glu Lys Val Ala 20 25 Leu Leu Ala Leu Leu Val Leu Pro Val Leu Leu Val Pro Glu Val Leu 40 Leu Val Leu Lys Ala His Val Val Thr Lys Val Lys Gln Val Asn Val 55 60 Glu Leu Leu Ala Ser Lys Asp Ile Glu Asp Ser Leu Val Ile Gln Val 75 70 Pro Gln Val Leu Gln Ala Leu Leu Val Ser Arg Val Gln Ser Ala Val 90 85 Gln Asp Leu Gln Ala Pro Glu Asp Leu Leu Asp Pro Val Asp Leu Leu 100 105 Ala Lys Met Glu Pro Val Asp Ile Gln Val Pro Leu Asp His Gln Gly . 125 ` 115 120 Leu Glu Val Thr Glu Val Lys Glu Asp Leu Arg Ala Pro Gln Ala Thr 135 140 Gln Gly Asn Gln Ala Leu Leu Asp Leu Leu Val Pro Leu Val Leu Ala 150 155 Val Val Leu Glu Pro Leu Pro Leu Gly Leu Glu Val Lys Lys 170 165 Leu Ala Val Leu Pro Arg Ile Met Glu Met Asn Gln Trp Ile Ser Lys 180 185 Ser Thr Pro Met Arg Leu \* 195 198

<210> 1210 <211> 59 <212> PRT <213> Homo sapiens

<210> 1211
<211> 227
<212> PRT
<213> Homo sapiens

<221> misc\_feature
<222> (1) ... (227)
<223> Xaa = any amino acid or nothing

<400> 1211 Met Ala Ser Ile Cys Ser Trp Arg Val Met Leu Ala Trp Ala Ala Cys 10 Trp Val Arg Ala His Ala Ala Leu Ser Gly His Pro Arg Ser Thr Phe 25 Ser Leu Trp Leu Ser Gly Ile Ser Leu Pro Xaa Pro Ile Phe Leu Pro 3**5** 40 Met Ala Val Ser Leu Leu Thr Pro Lys Asp Val Lys Tyr Ala Arg Ser 55 Pro Asn Cys Phe Lys Ala Ala Leu Asn Ile Pro Asp Pro Gly Ala Val 70 His Leu Ile Ile Ala Leu Leu Thr Asp Gly Ala Ile Pro Leu Leu 85 . 90 Gln Pro Ala Arg Val Lys Lys Ser Asn Ala His Val Phe Leu His Phe 100 105 Ala Gly Gly Asp Leu Leu Pro Ser Asn Gly Gly His Lys Ile Leu Ile 120 115 Trp Ser Arg Gly Trp Arg Gln Gly Leu Gly Gly Phe Gly Ile Ile Ile 135 140 Leu Ala Asp Asn Asp Leu Val Trp Ser Trp Gly Gln Ser Trp Arg His 150 155 Gly Cys Leu Leu Gly Val Gly Ala Leu Ser Ala Leu Leu Leu His His 170 Leu Asn Pro His Pro Tyr Leu Val Leu Gly Cys Pro Gly Pro Ala Gly 180 185 190 Lys Glu Ala Pro Pro Pro Ser Pro Val Cys His Pro Pro His Gln Thr 200 Arg Pro Pro Ser Gln Leu Pro His Ser Pro Gln Thr Phe His Ser Ala 210 220 Pro Glu \* 225 226

<210> 1212 <211> 62 <212> PRT <213> Homo sapiens

50 . 55 60 61

<210> 1213 <211> 55 <212> PRT <213> Homo sapiens

<400> 1213

<210> 1214 <211> 642 <212> PRT <213> Homo sapiens

<400> 1214

10 Leu Asp Thr Glu Val Phe Val Thr Gly Gln Ser Pro Thr Pro Ser Pro 20 25 Thr Asp Ala Tyr Leu Asn Ala Ser Glu Thr Thr Thr Leu Ser Pro Ser 40 45 Gly Ser Ala Val Ile Ser Thr Thr Thr Ile Ala Thr Thr Pro Ser Lys 55 60 Pro Thr Cys Asp Glu Lys Tyr Ala Asn Ile Thr Val Asp Tyr Leu Tyr 70 75 Asn Lys Glu Thr Lys Leu Phe Thr Ala Lys Leu Asn Val Asn Glu Asn 85 90 Val Glu Cys Gly Asn Asn Thr Cys Thr Asn Asn Glu Val His Asn Leu 100 105 Thr Glu Cys Lys Asn Ala Ser Val Ser Ile Ser His Asn Ser Cys Thr 120 125 Ala Pro Asp Lys Thr Leu Ile Leu Asp Val Pro Pro Gly Val Glu Lys 135 Phe Gln Leu His Asp Cys Thr Gln Val Glu Lys Ala Asp Thr Thr Ile 150 155 160 Cys Leu Lys Trp Lys Asn Ile Glu Thr Phe Thr Cys Asp Thr Gln Asn 165 170 Ile Thr Tyr Arg Phe Gln Cys Gly Asn Met Ile Phe Asp Asn Lys Glu 180 185 Ile Lys Leu Glu Asn Leu Glu Pro Glu His Glu Tyr Lys Cys Asp Ser 200 Glu Ile Leu Tyr Asn Asn His Lys Phe Thr Asn Ala Ser Lys Ile Ile 220 Lys Thr Asp Phe Gly Ser Pro Gly Glu Pro Gln Ile Ile Phe Cys Arg 230 235

Met Thr Met Tyr Leu Trp Leu Lys Leu Leu Ala Phe Gly Phe Ala Phe

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Ser Glu Ala Ala His Gln Gly Val Ile Thr Trp Asn Pro Pro Gln Arg
                                   250
Ser Phe His Asn Phe Thr Leu Cys Tyr Ile Lys Glu Thr Glu Lys Asp
            260
                               265
Cys Leu Asn Leu Asp Lys Asn Leu Ile Lys Tyr Asp Leu Gln Asn Leu
                          280
Lys Pro Tyr Thr Lys Tyr Val Leu Ser Leu His Ala Tyr Ile Ile Ala
                      295
                                          300
Lys Val Gln Arg Asn Gly Ser Ala Ala Met Cys His Phe Thr Thr Lys
                   310
                                       315
Ser Ala Pro Pro Ser Gln Val Trp Asn Met Thr Val Ser Met Thr Ser
               325
                                  330
Asp Asn Ser Met His Val Lys Cys Arg Pro Pro Arg Asp Arg Asn Gly
                              345
Pro His Glu Arg Tyr His Leu Glu Val Glu Ala Gly Asn Thr Leu Val
                           360
Arg Asn Glu Ser His Lys Asn Cys Asp Phe Arg Val Lys Asp Leu Gln
                       375
Tyr Ser Thr Asp Tyr Thr Phe Lys Ala Tyr Phe His Asn Gly Asp Tyr
                 390
                                       395
Pro Gly Glu Pro Phe Ile Leu His His Ser Thr Ser Tyr Asn Ser Lys
               405
                                  410
Ala Leu Ile Ala Phe Leu Ala Phe Leu Ile Ile Val Thr Ser Ile Ala
                              425
Leu Leu Val Val Leu Tyr Lys Ile Tyr Asp Leu His Lys Lys Arg Ser
                          440
Cys Asn Leu Asp Glu Gln Gln Leu Val Glu Arg Asp Asp Glu Lys
                      455
                                         460
Gln Leu Met Asn Val Glu Pro Ile His Ala Asp Ile Leu Leu Glu Thr
                   470
                                      475
Tyr Lys Arg Lys Ile Ala Asp Glu Gly Arg Leu Phe Leu Ala Glu Phe
                                   490
Gln Ser Ile Pro Arg Val Phe Ser Lys Phe Pro Ile Lys Glu Ala Arg
                              505
                                   . 510
Lys Pro Phe Asn Gln Asn Lys Asn Arg Tyr Val Asp Ile Leu Pro Tyr
                           520
Asp Tyr Asn Arg Val Glu Leu Ser Glu Ile Asn Gly Asp Ala Gly Ser
                       535
                                           540
Asn Tyr Ile Asn Ala Ser Tyr Ile Asp Gly Phe Lys Glu Pro Arg Lys
                   550
Tyr Ile Ala Ala Gln Gly Pro Arg Asp Glu Thr Val Asp Asp Phe Trp
               565
                                  570
Arg Met Ile Trp Glu Gln Lys Ala Thr Val Ile Val Met Val Thr Arg
           580
                              585
Cys Glu Glu Gly Asn Arg Asn Lys Cys Ala Glu Tyr Trp Pro Ser Met
                           600
Glu Glu Gly Thr Arg Ala Phe Gly Glu Cys Cys Cys Lys Asp Leu Thr
                      615
                                          620
Lys His Lys Arg Cys Pro Arg Leu His His Ser Glu Ile Glu His Cys
625
                   630
                                       635
Lys *
641
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<sup>&</sup>lt;210> 1215

<sup>&</sup>lt;211> 85

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<210> 1216 <211> 403 <212> PRT <213> Homo sapiens

260

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Pro Gln Pro Val Met Val Thr Trp Val Arg Val Asp Asp Glu Met Pro 280 Gln His Ala Val Leu Ser Gly Pro Asn Leu Phe Ile Asn Asn Leu Asn 295 300 Lys Thr Asp Asn Gly Thr Tyr Arg Cys Glu Ala Ser Asn Ile Val Gly 310 315 Lys Ala His Ser Asp Tyr Met Leu Tyr Val Tyr Asp Pro Pro Thr Thr 325 330 340 345 Thr Ile Leu Thr Ile Ile Thr Asp Ser Arg Ala Gly Glu Glu Gly Ser 360 365 Ile Arg Ala Val Asp His Ala Val Ile Gly Gly Val Val Ala Val Val 375 380 Val Phe Ala Met Leu Cys Leu Leu Ile Ile Leu Gly Arg Tyr Phe Ala 390 395 Gln Thr \* 402

<210> 1217 <211> 49 <212> PRT <213> Homo sapiens

<210> 1218 <211> 304 <212> PRT <213> Homo sapiens

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          100
Ala Pro Ser Glu Gln Gly Gln Asn Leu Glu Glu Asp Thr Val Thr Leu
                    120
                                          125
Glu Val Leu Gly Asp Val His Val Leu Ala Pro Ala Val Pro Ser Cys
                  135
                                      140
Glu Val Pro Ser Ser Ala Leu Ser Gly Thr Val Val Glu Leu Arg Cys
                               . 155
        150
Gln Asp Lys Glu Gly Asn Pro Ala Pro Glu Tyr Thr Trp Phe Lys Asp
         165
                               170
Gly Ile Arg Leu Leu Glu Asn Pro Arg Leu Gly Ser Gln Ser Thr Asn
         180
                           185
Ser Ser Tyr Thr Met Asn Thr Lys Thr Gly Thr Leu Gln Phe Asn Thr
             200
Val Ser Lys Leu Asp Thr Gly Glu Tyr Ser Cys Glu Ala Arg Asn Ser
210 215
                                     220
Val Gly Tyr Arg Arg Cys Pro Gly Lys Arg Met Gln Val Asp Asp Leu ´
                230
                                  235
Asn Ile Ser Gly Ile Ile Ala Ala Val Val Val Ala Leu Val Ile
              245
                               250
Ser Val Cys Gly Leu Gly Val Cys Tyr Ala Gln Arg Lys Gly Tyr Phe
          260
                           265
                                              270
Ser Lys Glu Thr Ser Phe Gln Lys Ser Asn Ser Ser Ser Lys Ala Thr
      275 280
Thr Met Ser Glu Asn Asp Phe Lys His Thr Lys Ser Phe Ile Ile *
                    295
                                       300
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<210> 1219 <211> 1126 <212> PRT <213> Homo sapiens

<400> 1219 Met Trp Phe Leu Phe Leu Cys Pro Asn Leu Trp Ala Met Pro Val Gln 10 Ile Ile Met Gly Val Ile Leu Leu Tyr Asn Leu Leu Gly Ser Ser Ala 20 25 Leu Val Gly Ala Ala Val Ile Val Leu Leu Ala Pro Ile Gln Tyr Phe 40 Ile Ala Thr Lys Leu Ala Glu Ala Gln Lys Ser Thr Leu Asp Tyr Ser 55 Thr Glu Arg Leu Lys Lys Thr Asn Glu Ile Leu Lys Gly Ile Lys Leu 70 Leu Lys Leu Tyr Ala Trp Glu His Ile Phe Cys Lys Ser Val Glu Glu 85 90 Thr Arg Met Lys Glu Leu Ser Ser Leu Lys Thr Phe Ala Leu Tyr Thr 105 Ser Leu Ser Ile Phe Met Asn Ala Ala Ile Pro Ile Ala Ala Val Leu 120 Ala Thr Phe Val Thr His Ala Tyr Ala Ser Gly Asn Asn Leu Lys Pro 135 Ala Glu Ala Phe Ala Ser Leu Ser Leu Phe His Ile Leu Val Thr Pro 150 155 Leu Phe Leu Leu Ser Thr Val Val Arg Phe Ala Val Lys Ala Ile Ile 165 170 Ser Val Gln Lys Leu Asn Glu Phe Leu Leu Ser Asp Glu Ile Gly Asp 180 185

Asp Ser Trp Arg Thr Gly Glu Ser Ser Leu Pro Phe Glu Ser Cys Lys Lys His Thr Gly Val Gln Pro Lys Thr Ile Asn Arg Lys Gln Pro Gly Arg Tyr His Leu Asp Ser Tyr Glu Gln Ser Thr Arg Arg Leu Arg Pro Ala Glu Thr Glu Asp Ile Ala Ile Lys Val Thr Asn Gly Tyr Phe Ser Trp Gly Ser Gly Leu Ala Thr Leu Ser Asn Ile Asp Ile Arg Ile Pro Thr Gly Gln Leu Thr Met Ile Val Gly Gln Val Gly Cys Gly Lys Ser Ser Leu Leu Ala Ile Leu Gly Glu Met Gln Thr Leu Glu Gly Lys Val His Trp Ser Asn Val Asn Glu Ser Glu Pro Ser Phe Glu Ala Thr Arg Ser Arg Asn Arg Tyr Ser Val Ala Tyr Ala Ala Gln Lys Pro Trp Leu Leu Asn Ala Thr Val Glu Glu Asn Ile Thr Phe Gly Ser Pro Phe Asn Lys Gln Arg Tyr Lys Ala Val Thr Asp Ala Cys Ser Leu Gln Pro Asp Ile Asp Leu Leu Pro Phe Gly Asp Gln Thr Glu Ile Gly Glu Arg Gly Ile Asn Leu Ser Gly Gly Gln Arg Gln Arg Ile Cys Val Ala Arg Ala Leu Tyr Gln Asn Thr Asn Ile Val Phe Leu Asp Asp Pro Phe Ser Ala Leu Asp Ile His Leu Ser Asp His Leu Met Gln Glu Gly Ile Leu Lys Phe Leu Gln Asp Asp Lys Arg Thr Leu Val Leu Val Thr His Lys Leu Gln Tyr Leu Thr His Ala Asp Trp Ile Ile Ala Met Lys Asp Gly Ser Val Leu Arg Glu Gly Thr Leu Lys Asp Ile Gln Thr Lys Asp Val Glu Leu Tyr Glu His Trp Lys Thr Leu Met Asn Arg Gln Asp Gln Glu Leu Glu Lys Asp Met Glu Ala Asp Gln Thr Thr Leu Glu Arg Lys Thr Leu Arg Arg Ala Met Tyr Ser Arg Glu Ala Lys Ala Gln Met Glu Asp Glu Asp Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Asp Asn Met Ser Thr Val Met Arg Leu Arg Thr Lys Met Pro Trp Lys Thr Cys Trp Arg Tyr Leu Thr Ser Gly Gly Phe Phe Leu Leu Ile Leu Met Ile Phe Ser Lys Leu Leu Lys His Ser Val Ile Val Ala Ile Asp Tyr Trp Leu Ala Thr Trp Thr Ser Glu Tyr Ser Ile Asn Asn Thr Gly Lys Ala Asp Gln Thr Tyr Tyr Val Ala Gly Phe Ser Ile Leu Cys Gly Ala Gly Ile Phe Leu Cys Leu Val Thr Ser Leu Thr Val Glu Trp Met Gly Leu Thr Ala Ala Lys Asn Leu His His Asn Leu Leu Asn Lys Ile Ile Leu Gly Pro Ile Arg Phe Phe Asp Thr Thr Pro Leu Gly Leu Ile Leu Asn Arg Phe

			660					665					C70		
Se:	r Ala		Thr		Ile	Ile		Gln		Ile	Pro			Leu	Glu
Se	r Leu	675 Thr		Ser	Thr	Leu	680 Leu		Leu	Ser	Ala	685 Ile	Gly	Met	Ile
Sei	690 Tyr		Thr	Pro	Val	695 Phe		Val	Ala	Leu	700 Leu	Pro	Leu	Glv	Val
70!	5				710					715				_	720
	a Phe			725					730					735	
	ı Glu		740					745					750		
Glı	ı Thr	Ala 755	Glu	Gly	Leu	Thr	Thr 760		Arg	Ala	Phe	Arg 765	His	Glu	Thr
Arg	770 Phe		Gln	Aṛg	Met	Leu 775	Glu	Leu	Thr	Asp	Thr 780	Asn	Asn	Ile	Ala
Ту: 785	Leu 5	Phe	Leu	Ser	Ala 790		Asn	Arg	Trp	Leu 795		Val	Arg	Thr	
	Leu	Gly	Ala	Cys 805		Val	Leu	Thr			Ile	Ala	Ser		800 Ser
Gl	/ Ser	Ser	Asn 820		Gly	Leu	Val		810 Leu	Gly	Leu	Leu		815 Ala	Leu
Thi	: Ile	Thr 835		Tyr	Leu	Asn	Trp		Val	Arg	Asn	Leu 845	830 Ala	Asp	Leu
Glu	ı Val 850	Gln	Met	Gly	Ala	Val 855			Val	Asn	Ser 860		Leu	Thr	Met
Gl: 865	ı Ser		Asn	Tyr	Glu 870		Thr	Met	Asp			Gln	Val	Pro	
	Trp	Pro	Gln	Glu 885		Glu	Ile	Lys		875 His	Asp	Leu	Cys		880 Arg
Туз	Glu	Asn	Asn 900	_	Lys	Pro	Val		890 Lys	His	Val	Lys		895 Tyr	Ile
Lys	Pro	Gly 915		Lys	Val	Gly	Ile 920	905 Cys	Gly	Arg	Thr	Glý 925	910 Ser	Gly	Lys
Ser	Ser 930		Ser	Leu	Ala	Phe 935		Arg	Met	Val	Asp 940		Phe	Asp	Gly
Lys 945	Ile	Val	Ile	Asp	Gly 950		Asp	Ile	Ser	Lys 955		Pro	Leu	His	
	a Arg	Ser	Arg	Leu 965		Ile	Ile	Leu	Gln 970		Pro	Ile	Leu	Phe 975	960 Ser
Gly	/ Ser	Ile	Arg 980	Phe	Asn	Leu	Asp	Pro 985		Cys	Lys	Cys	Thr 990		Asp
Arg	Leu	Trp 995	Glu	Ala	Leu		Ile LOOO		Gln	Leu		Asn L005		Val	Lys
Ser	Leu 1010	Pro	Gly	Gly				Val	Val				Gly	Glu	Asn
Phe 1025	Ser	Val	Gly				Leu	Phe				Arg	Ala		Val
Arg	Lys	Ser				Ile	Met				Thr	Ala			
Met	Ala				Ile	Leu				Val	Met		Ala		Ala
Asp	Arg			Val	Thr				Arg	Val			IO70 Ile	Met	Asp
Ala	Gly 1090		Val	Leu				Glu	Gly		Leu		Glu	Cys	Ąsp
Thr 1105	Val	Pro	Asn		Phe		His	Lys		Gly	Pro	Phe	Ser		
	Met	Thr			.110 *					.115				1	.120
			_	-											

<210> 1220 <211> 46 <212> PRT <213> Homo sapiens

<210> 1221 <211> 56 <212> PRT <213> Homo sapiens

<210> 1222 <211> 253 <212> PRT <213> Homo sapiens

<400> 1222 Met Gly Cys Ala Ile Ile Ala Gly Phe Leu His Tyr Leu Phe Leu Ala 5 Cys Phe Phe Trp Met Leu Val Glu Ala Val Ile Leu Phe Leu Met Val 25 Arg Asn Leu Lys Val Val Asn Tyr Phe Ser Ser Arg Asn Ile Lys Met 40 45 Leu His Ile Cys Ala Phe Gly Tyr Gly Leu Pro Met Leu Val Val Val 60 55 Ile Ser Ala Ser Val Gln Pro Gln Gly Tyr Gly Met His Asn Arg Cys 75 70 Trp Leu Asn Thr Glu Thr Gly Phe Ile Trp Ser Phe Leu Gly Pro Val 90 85 Cys Thr Val Ile Val Ile Asn Ser Leu Leu Leu Thr Trp Thr Leu Trp 100 105 110 Ile Leu Arg Gln Arg Leu Ser Ser Val Asn Ala Glu Val Ser Thr Leu

120 115 Lys Asp Thr Arg Leu Leu Thr Phe Lys Ala Phe Ala Gln Leu Phe Ile 135 Leu Gly Cys Ser Trp Val Leu Gly Ile Phe Gln Ile Gly Pro Val Ala 150 155 Gly Val Met Ala Tyr Leu Phe His His His Gln Gln Pro Ala Gly Gly 165 170 Leu His Leu Pro His Pro Leu Ser Ala Gln Arg Pro Gly Thr Arg Arg 185 Ile Gln Glu Val Asp His Trp Glu Asp Glu Ala Gln Leu Pro Val Pro 200 Asp Leu Lys Asp Leu Ala Val Leu His Ala Ile Arg Phe Gln Asp Gly 215 Leu Lys Ser Phe Leu Ala Phe Lys Tyr Ala Met Glu Pro Thr Val Gly 230 235 Gly Thr Ser Ser Phe Pro Cys Arg Glu Pro Tyr Pro \* 250

<210> 1223 <211> 858 <212> PRT <213> Homo sapiens

10 Lys Gly Phe Leu Leu Ser Leu Gly Asp His Asn Phe Leu Arg Arg Glu 20 25 Ile Lys Ile Glu Gly Asp Leu Val Leu Gly Gly Leu Phe Pro Ile Asn 40 Glu Lys Gly Thr Gly Thr Glu Glu Cys Gly Arg Ile Asn Glu Asp Arg 55 Gly Ile Gln Arg Leu Glu Ala Met Leu Phe Ala Ile Asp Glu Ile Asn 70 Lys Asp Asp Tyr Leu Leu Pro Gly Val Lys Leu Gly Val His Ile Leu 85 90 Asp Thr Cys Ser Arg Asp Thr Tyr Ala Leu Glu Gln Ser Leu Glu Phe 105 Val Arg Ala Ser Leu Thr Lys Val Asp Glu Ala Glu Tyr Met Cys Pro 120 Asp Gly Ser Tyr Ala Ile Gln Glu Asn Ile Pro Leu Leu Ile Ala Gly 135 Val Ile Gly Gly Ser Tyr Ser Arg Val Ser Ile Gln Gly Ala Asn Leu 150 155 Leu Arg Leu Phe Gln Ile Pro Gln Ile Arg Tyr Ala Ser Thr Ser Ala 170 165 Lys Leu Ser Asp Lys Ser Arg Tyr Asp Tyr Phe Ala Arg Thr Val Pro 185 Pro Asp Phe Tyr Gln Ala Lys Ala Met Ala Glu Ile Leu Arg Phe Phe 200 Asn Trp Thr Tyr Val Ser Thr Val Ala Ser Glu Gly Asp Tyr Gly Glu 215 220 Thr Gly Ile Glu Ala Phe Glu Gln Glu Ala Arg Leu Arg Asn Ile Cys 225 230 235 Ile Ala Thr Ala Glu Lys Val Gly Arg Ser Asn Ile Arg Lys Ser Tyr 250

Asp Ser Val Ile Arg Glu Leu Leu Gln Lys Pro Asn Ala Arg Val Val Val Leu Phe Met Arg Ser Asp Asp Ser Arg Glu Leu Ile Ala Ala Ala Ser Arg Ala Asn Ala Ser Phe Thr Trp Val Ala Ser Asp Gly Trp Gly Ala Gln Glu Ser Ile Ile Lys Gly Ser Glu His Val Ala Tyr Gly Ala Ile Thr Leu Glu Leu Ala Ser Gln Pro Val Arg Gln Phe Asp Arg Tyr Phe Gln Ser Leu Asn Pro Tyr Asn Asn His Arg Asn Pro Trp Phe Arg Asp Phe Trp Glu Gln Lys Phe Gln Cys Ser Leu Gln Asn Lys Arg Asn His Arg Arg Val Cys Asp Lys His Leu Ala Ile Asp Ser Ser Asn Tyr Glu Gln Glu Ser Lys Ile Met Phe Val Val Asn Ala Val Tyr Ala Met Ala His Ala Leu His Lys Met Gln Arg Thr Leu Cys Pro Asn Thr Thr Lys Leu Cys Asp Ala Met Lys Ile Leu Asp Gly Lys Lys Leu Tyr Lys Asp Tyr Leu Leu Lys Ile Asn Phe Thr Ala Pro Phe Asn Pro Asn Lys Asp Ala Asp Ser Ile Val Lys Phe Asp Thr Phe Gly Asp Gly Met Gly Arg Tyr Asn Val Phe Asn Phe Gln Asn Val Gly Gly Lys Tyr Ser Tyr Leu Lys Val Gly His Trp Ala Glu Thr Leu Ser Leu Asp Val Asn Ser Ile His Trp Ser Arg Asn Ser Val Pro Thr Ser Gln Cys Ser Asp Pro Cys Ala Pro Asn Glu Met Lys Asn Met Gln Pro Gly Asp Val Cys Cys Trp Ile Cys Ile Pro Cys Glu Pro Tyr Glu Tyr Leu Ala Asp Glu Phe Thr Cys Met Asp Cys Gly Ser Gly Gln Trp Pro Thr Ala Asp Leu Thr Gly Cys Tyr Asp Leu Pro Glu Asp Tyr Ile Arg Trp Glu Asp Ala Trp Ala Ile Gly Pro Val Thr Ile Ala Cys Leu Gly Phe Met Cys Thr Cys Met Val Val Thr Val Phe Ile Lys His Asn Asn Thr Pro Leu Val Lys Ala Ser Gly Arg Glu Leu Cys Tyr Ile Leu Leu Phe Gly Val Gly Leu Ser Tyr Cys Met Thr Phe Phe Phe Ile Ala Lys Pro Ser Pro Val Ile Cys Ala Leu Arg Arg Leu Gly Leu Gly Ser Ser Phe Ala Ile Cys Tyr Ser Ala Leu Leu Thr Lys Thr Asn Cys Ile Ala Arg Ile Phe Asp Gly Val Lys Asn Gly Ala Gln Arg Pro Lys Phe Ile Ser Pro Ser Ser Gln Val Phe Ile Cys Leu Gly Leu Ile Leu Val Gln Ile Val Met Val Ser Val Trp Leu Ile Leu Glu Ala Pro Gly Thr Arg Arg Tyr Thr Leu Ala Glu Lys Arg Glu Thr Val Ile Leu Lys Cys Asn Val Lys Asp Ser Ser

730 725 Met Leu Ile Ser Leu Thr Tyr Asp Val Ile Leu Val Ile Leu Cys Thr 745 740 Val Tyr Ala Phe Lys Thr Arg Lys Cys Pro Glu Asn Phe Asn Glu Ala 765 760 Lys Phe Ile Gly Phe Thr Met Tyr Thr Thr Cys Ile Ile Trp Leu Ala 780 775 Phe Leu Pro Ile Phe Tyr Val Thr Ser Ser Asp Tyr Arg Val Gln Thr 795 790 Thr Thr Met Cys Ile Ser Val Ser Leu Ser Gly Phe Val Val Leu Gly 805 810 Cys Leu Phe Ala Pro Lys Val His Ile Ile Leu Phe Gln Pro Gln Lys 820 825 Asn Val Val Thr His Arg Leu His Leu Asn Arg Phe Ser Val Ser Gly 835 840 Thr Gly Thr His Ile Leu Ser Val Leu \* 855 857

<210> 1224 <211> 69 <212> PRT <213> Homo sapiens

<210> 1225 <211> 55 <212> PRT <213> Homo sapiens

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<210> 1229 <211> 52 <212> PRT <213> Homo sapiens

<400> 1229 Met Cys Glu Ser Thr Glu Leu Asn Met Thr Phe His Leu Phe Ile Val

1 5 10 15

Ala Leu Ala Gly Ala Gly Ala Ala Val Ile Ala Met Val His Tyr Leu
20 25 30

Met Val Leu Ser Ala Asn Trp Ala Tyr Val Lys Asp Ala Cys Arg Met
35 40 45

Ala Glu Val \*
50 51

<210> 1230 <211> 362 <212> PRT <213> Homo sapiens

<400> 1230 Met Pro Val Ile Trp Ser Ala Leu Ser Ala Val Leu Leu Leu Ala Ser 10 Ser Tyr Phe Val Gly Ala Leu Ile Val His Ala Asp Cys Phe Leu Met 20 Arg Asn His Thr Ile Thr Glu Gln Pro Met Cys Phe Gln Arg Thr Thr 35 40 Pro Leu Ile Leu Gln Glu Val Ala Ser Phe Leu Lys Arg Asn Lys His 55 60 Gly Pro Phe Leu Leu Phe Val Ser Phe Leu His Val His Ile Pro Leu 70 75 Ile Thr Met Glu Asn Phe Leu Gly Lys Ser Leu His Gly Leu Tyr Gly 85 90 Asp Asn Val Lys Glu Met Asp Trp Met Val Gly Arg Ile Leu Asp Thr 100 105 Leu Asp Val Glu Gly Leu Ser Asn Ser Thr Leu Ile Tyr Phe Thr Ser 115 120 1.25 Asp His Gly Gly Ser Leu Glu Asn Gln Leu Gly Asn Thr Gln Tyr Gly 135 140 Gly Trp Asn Gly Ile Tyr Lys Gly Gly Lys Gly Met Gly Gly Trp Glu 150 155 Gly Gly Ile Arg Val Pro Gly Ile Phe Arg Trp Pro Gly Val Leu Pro 165 170 Ala Gly Arg Val Ile Gly Glu Pro Thr Ser Leu Met Asp Val Phe Pro 185 Thr Val Val Arg Leu Ala Gly Ser Glu Val Pro Gln Asp Arg Val Ile 200 Asp Gly Gln Asp Leu Leu Pro Leu Leu Leu Gly Thr Ala Gln His Ser 215 Asp His Glu Phe Leu Met His Tyr Cys Glu Arg Phe Leu His Ala Ala 225 230 235 Arg Trp His Gln Arg Asp Arg Gly Thr Met Trp Lys Val His Phe Val 245 250 Thr Pro Val Phe Gln Pro Arg Gly Ser Arg Cys Leu Leu Trp Lys Glu 260 265 Lys Val Cys Pro Cys Phe Gly Glu Lys Ser Ser Pro Pro Arg Ser His 280 Pro Cys Phe Phe Asp Leu Ser Arg Ala Pro Ser Glu Thr His Ile Leu 295 Thr Pro Ala Ser Glu Pro Val Phe Tyr Gln Val Met Glu Arg Ser Pro 310 315 Ala Gly Gly Val Gly Thr Pro Ala Asp Thr Gln Pro Ser Ser Ala 325 330

Ala Gly Gln Ala Gly Gln Tyr Leu Glu Thr Gly Gly Ala Ala Leu Leu 340 345 350

Trp Ala Val Pro Pro Leu Val Gly Pro \* 355 360 361

<210> 1231 <211> 53 <212> PRT <213> Homo sapiens

<210> 1232 <211> 56 <212> PRT <213> Homo sapiens

<210> 1233 <211> 56 <212> PRT <213> Homo sapiens

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<210> 1234
<211> 125
<212> PRT
<213> Homo sapiens
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<400> 1234 Met Leu Ser Gln Leu Pro Arg Cys Gln Ser Ser Val Pro Ala Leu Ala 10 His Pro Thr Arg Leu His Tyr Leu Leu Arg Leu Leu Thr Phe Leu Leu 20 25 Gly Pro Gly Ala Gly Gly Ala Glu Ala Gln Gly Met Leu Gly Arg Ala 40 Leu Leu Ser Ser Leu Pro Asp Asn Cys Ser Phe Trp Asp Ala Phe 55 50 Arg Pro Glu Gly Arg Arg Ser Val Leu Arg Thr Ile Gly Glu Tyr Leu 70 75 Glu Gln Asp Glu Glu Gln Pro Thr Pro Ser Gly Phe Glu Pro Thr Val .85 90 Asn Pro Ser Ser Gly Ile Ser Lys Met Glu Leu Leu Ala Cys Phe Ser 100 105 Val Ser Ala Leu Pro Glu Gly Lys Leu Leu Glu Gln

120

<210> 1235 <211> 72 <212> PRT <213> Homo sapiens

<210> 1236 <211> 48 <212> PRT <213> Homo sapiens

Arg Ala Gly Gly Leu Gly Phe Thr His Cys Gln Ala Asn Ser Thr Thr 35 40 45 48

<210> 1237 <211> 208 <212> PRT <213> Homo sapiens

<400> 1237 Met Ala Phe Leu Arg Lys Val Tyr Ser Ile Leu Ser Leu Gln Val Leu 10 Leu Thr Thr Val Thr Ser Thr Val Phe Leu Tyr Phe Glu Ser Val Arg 20 25 Thr Phe Val His Glu Ser Pro Ala Leu Ile Leu Leu Phe Ala Leu Gly 40 Ser Leu Gly Leu Ile Phe Ala Leu Ile Leu Asn Arg His Lys Tyr Pro 55 Leu Asn Leu Tyr Leu Leu Phe Gly Phe Thr Leu Leu Glu Ala Leu Thr 70 75 Val Ala Val Val Thr Phe Tyr Asp Val Tyr Ile Ile Leu Gln Ala 90 85 Phe Ile Leu Thr Thr Thr Val Phe Phe Gly Leu Thr Val Tyr Thr Leu 105 110 Gln Ser Eys Lys Asp Phe Ser Lys Phe Gly Ala Gly Leu Phe Ala Leu 120 125 115 Leu Trp Ile Leu Cys Leu Ser Gly Phe Leu Lys Phe Phe Phe Tyr Ser 135 140 Glu Ile Met Glu Leu Val Leu Ala Ala Gly Ala Leu Leu Phe Cys 150 155 Gly Phe Ile Tyr Asp Thr His Ser Leu Met His Lys Leu Ser Pro 165 170 Glu Glu Tyr Val Leu Ala Ala Ile Ser Leu Tyr Leu Asp Ile Ile Asn 180 185 190 Leu Phe Leu His Leu Leu Arg Phe Leu Glu Ala Val Asn Lys Lys \* 195 200

<210> 1238 <211> 173 <212> PRT <213> Homo sapiens

70 75 Asn Phe Gly Phe Ser Leu Leu Arg Lys Ile Ser Met Arg His Asp Gly 85 90 Asn Met Val Phe Ser Pro Phe Gly Met Ser Leu Ala Met Thr Gly Leu 105 100 Met Leu Gly Ala Thr Gly Pro Thr Glu Thr Gln Ile Lys Arg Gly Leu 125 120 His Leu Gln Ala Leu Lys Pro Thr Lys Pro Gly Leu Leu Pro Ser Leu 135 140 Phe Lys Gly Leu Arg Glu Thr Leu Ser Arg Asn Leu Glu Leu Gly Leu 150 155 Thr Ala Gly Glu Phe Cys Leu His Pro Gln Gly Phe 165 170

<210> 1239 <211> 357 <212> PRT <213> Homo sapiens

<400> 1239

Met Ala Phe Leu Gly Leu Phe Ser Leu Leu Val Leu Gln Ser Met Ala 10 Thr Gly Ala Thr Phe Pro Glu Glu Ala Ile Ala Asp Leu Ser Val Asn 25 20 Met Tyr Asn Arg Leu Arg Ala Thr Gly Glu Asp Glu Asn Ile Leu Phe 40 Ser Pro Leu Ser Ile Ala Leu Ala Met Gly Met Met Glu Leu Gly Ala 55 Gln Gly Ser Thr Gln Lys Glu Ile Arg His Ser Met Gly Tyr Asp Ser 70 75 Leu Lys Asn Gly Glu Glu Phe Ser Phe Leu Lys Glu Phe Ser Asn Met 85 90 Val Thr Ala Lys Glu Ser Gln Tyr Val Met Lys Ile Ala Asn Ser Leu 105 Phe Val Gln Asn Gly Phe His Val Asn Glu Glu Phe Leu Gln Met Met 115 120 125 Lys Lys Tyr Phe Asn Ala Ala Val Asn His Val Asp Phe Ser Gln Asn 130 135 140 Val Ala Val Ala Asn Tyr Ile Asn Lys Trp Val Glu Asn Asn Thr Asn 150 155 Asn Leu Val Lys Asp Leu Val Ser Pro Arg Asp Phe Asp Ala Ala Thr 170 Tyr Leu Ala Leu Ile Asn Ala Val Tyr Phe Lys Gly Asn Trp Lys Ser 180 185 190 Gln Phe Arg Pro Glu Asn Thr Arg Thr Phe Ser Phe Thr Lys Asp Asp 200 205 Glu Ser Glu Val Gln Ile Pro Met Met Tyr Gln Gln Gly Glu Phe Tyr 220 215 Tyr Gly Glu Phe Ser Asp Gly Ser Asn Glu Ala Gly Gly Ile Tyr Gln 230 235 Val Leu Glu Ile Pro Tyr Glu Gly Asp Glu Ile Ser Met Met Leu Val 250 Leu Ser Arg Gln Glu Val Pro Leu Ala Thr Leu Glu Pro Leu Val Lys 265 Ala Gln Leu Val Glu Glu Trp Ala Asn Ser Val Lys Lys Gln Lys Val 280

<210> 1240 <211> 707 <212> PRT <213> Homo sapiens

<400> 1240 Met Leu Ser Leu Arg Arg Cys Thr Ser Met Arg Leu Cys Leu Ser Ser 10 Ser Leu Ala Ser Pro Cys Ser Thr Met Leu Ser Thr Val Val Leu Tyr Lys Val Cys Asn Ser Phe Val Glu Met Gly Ser Ala Asn Val Gln Ala 40 Thr Asp Tyr Leu Lys Gly Val Ala Ser Leu Phe Val Val Ser Leu Gly 55 Gly Ala Ala Val Gly Leu Val Phe Ala Phe Leu Leu Ala Leu Thr Thr 70 75 80 Arg Phe Thr Lys Arg Val Arg Ile Ile Glu Pro Leu Leu Val Phe Leu 90 Leu Ala Tyr Ala Ala Tyr Leu Thr Ala Glu Met Ala Ser Leu Ser Ala Ile Leu Ala Val Thr Met Cys Gly Leu Gly Cys Lys Lys Tyr Val Glu 120 Ala Asn Ile Ser His Lys Ser Arg Thr Thr Val Lys Tyr Thr Met Lys 135 140 Thr Leu Ala Ser Cys Ala Glu Thr Val Ile Phe Met Leu Leu Gly Ile 155 Ser Thr Val Asp Ser Ser Lys Trp Ala Trp Asp Ser Gly Leu Val Leu 165 170 Gly Thr Leu Ile Phe Ile Leu Phe Phe Arg Ala Leu Gly Val Val Leu 180 185 Gln Thr Trp Val Leu Asn Gln Phe Arg Leu Val Pro Leu Asp Lys Ile 195 200 205 Asp Gln Val Val Met Ser Tyr Gly Gly Leu Arg Gly Ala Val Ala Phe 215 220 Ala Leu Val Ile Leu Leu Asp Arg Thr Lys Val Pro Ala Lys Asp Tyr

 Phe
 Val
 Ala
 Thr
 Thr
 Ile
 Val
 Val
 Phe
 Phe
 Thr
 Val
 Ile
 Val
 Gln

 Gly
 Leu
 Thr
 Ile
 Lys
 Pro
 Leu
 Val
 Lys
 Trp
 Leu
 Lys
 Val
 Lys
 Arg
 Ser

 Glu
 His
 His
 Lys
 Pro
 Thr
 Leu
 Asn
 Glu
 Leu
 His
 Glu
 His
 Thr
 Phe

 Asp
 His
 Ile
 Leu
 Ala
 Ala
 Val
 Glu
 Asp
 Val
 Gly
 His
 His
 His
 Gly
 Tyr
 Leu
 Ser

 Asp
 His
 Ile
 Leu
 Ala
 Ala
 Val
 Glu
 Asp
 Val
 Gly
 His
 His
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 Tyr
 Leu
 Ser

 His
 Tyr
 Asp
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 Trp
 Glu
 Gln
 Phe
 Asp
 Lys
 Lys
 Tyr
 Leu
 Ser

230

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310
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Gln Leu Leu Met Arg Arg Ser Ala Tyr Arg Ile Arg Asp Gln Ile Trp
              325
                                 330
Asp Val Tyr Tyr Arg Leu Asn Ile Arg Asp Ala Ile Ser Phe Val Asp
                              345
Gln Gly Gly His Val Leu Ser Ser Thr Gly Leu Thr Leu Pro Ser Met
                         360
Pro Ser Arg Asn Ser Val Ala Glu Thr Ser Val Thr Asn Leu Leu Arg
                      375
                                         380
Glu Ser Gly Ser Gly Ala Cys Leu Asp Leu Gln Val Ile Asp Thr Val
                  390
                                     395
Arg Ser Gly Arg Asp Arg Glu Asp Ala Val Met His His Leu Leu Cys
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                                 410
Gly Gly Leu Tyr Lys Pro Arg Arg Tyr Lys Ala Ser Cys Ser Arg
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His Phe Ile Ser Glu Asp Ala Gln Glu Arg Gln Asp Lys Glu Val Phe
                 440
Gln Gln Asn Met Lys Arg Arg Leu Glu Ser Phe Lys Ser Thr Lys His
                      455 460
Asn Ile Cys Phe Thr Lys Ser Lys Pro Arg Pro Arg Lys Thr Gly Arg
                 470
                                     475
Arg Lys Lys Asp Gly Val Ala Asn Ala Glu Ala Thr Asn Gly Lys His
                                  490
Arg Gly Leu Gly Phe Gln Asp Thr Ala Ala Val Ile Leu Thr Val Glu
           500
                              505
Ser Glu Glu Glu Glu Glu Ser Asp Ser Ser Glu Thr Glu Lys Glu
                          520
                                             525
Asp Asp Glu Gly Ile Ile Phe Val Ala Arg Ala Thr Ser Glu Val Leu
                      535
                                         540
Gln Glu Gly Lys Val Ser Gly Ser Leu Glu Val Cys Pro Ser Pro Arg
                   550
                                      555
Ile Ile Pro Pro Ser Pro Thr Cys Ala Glu Lys Glu Leu Pro Trp Lys
              565
                                  570
Ser Gly Gln Gly Asp Leu Ala Val Tyr Val Ser Ser Glu Thr Thr Lys
                              585
Ile Val Pro Val Asp Met Gln Thr Gly Trp Asn Gln Ser Ile Ser Ser
                          600
                                             605
Leu Glu Ser Leu Ala Ser Pro Pro Cys Asn Gln Ala Pro Ile Leu Thr
                      615
                                         620
Cys Leu Pro Pro His Pro Arg Gly Thr Glu Glu Pro Gln Val Pro Leu
                  630
                                     635
His Leu Pro Ser Asp Pro Arg Ser Ser Phe Ala Phe Pro Pro Ser Leu
                                 650
Ala Lys Ala Gly Arg Ser Arg Ser Glu Ser Ser Ala Asp Leu Pro Gln
          660
                    665
Gln Gln Glu Leu Gln Pro Leu Met Gly His Lys Asp His Thr His Leu
       675 . 680
Ser Pro Gly Thr Ala Thr Ser His Trp Cys Ile Gln Phe Asn Arg Gly
Ser Arg Leu
705
       707
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<210> 1241 <211> 98 <212> PRT <213> Homo sapiens

<400> 1241 Met Ala Phe Arg Thr Phe Ser Trp Ile Phe Ser Gly Leu Leu Ser Pro 10 Thr Leu Ala Ser Pro Ser Val Ser Met Met Thr Met Glu Val Leu Leu 20 25 Ser Gly Ile Leu Cys Ser Ser Arg Ala Leu Phe Ser Ile Leu Met Pro 40 Leu Ser Ser Pro Ser Leu Met Leu Val Ile Pro Leu Ser Ser Met Leu 55 60 Phe Thr Asn Val Leu Ala Ser Trp Arg Phe Ser Gly Val Ala Trp Thr 70 Lys Cys Ser Phe His Val Asp Thr Ser Pro Leu Asn Arg Met Lys Phe 90 Arg \* 97

<210> 1242 <211> 422 <212> PRT <213> Homo sapiens

<400> 1242

Met Val Leu Trp Glu Ser Pro Arg Gln Cys Ser Ser Trp Thr Leu Cys 1.0 Glu Gly Phe Cys Trp Leu Leu Leu Pro Val Met Leu Leu Ile Val 25 Ala Arg Pro Val Lys Leu Ala Ala Phe Pro Thr Ser Leu Ser Asp Cys 40 Gln Thr Pro Thr Gly Trp Asn Cys Ser Gly Tyr Asp Asp Arg Glu Asn 55 Asp Leu Phe Leu Cys Asp Thr Asn Thr Cys Lys Phe Asp Gly Glu Cys 70 75 Leu Arg Ile Gly Asp Thr Val Thr Cys Val Cys Gln Phe Lys Cys Asn 90 Asn Asp Tyr Val Pro Val Cys Gly Ser Asn Gly Glu Ser Tyr Gln Asn 105 Glu Cys Tyr Leu Arg Gln Ala Ala Cys Lys Gln Gln Ser Glu Ile Leu 120 Val Val Ser Glu Gly Ser Cys Ala Thr Asp Ala Gly Ser Gly Ser Gly 135 Asp Gly Val His Glu Gly Ser Gly Glu Thr Ser Gln Lys Glu Thr Ser 150 155 Thr Cys Asp Ile Cys Gln Phe Gly Ala Glu Cys Asp Glu Asn Ala Glu 165 170 Asp Val Trp Cys Val Cys Asn Ile Asp Cys Ser Gln Thr Asn Phe Asn 180 185 Pro Leu Cys Ala Ser Asp Gly Lys Ser Tyr Asp Asn Ala Cys Gln Ile 200 Lys Glu Ala Ser Cys Gln Lys Gln Glu Lys Ile Glu Val Leu Ser Leu 215 220 Gly Arg Cys Gln Asp Asn Thr Thr Thr Thr Thr Lys Ser Glu Asp Gly 230 235 His Tyr Ala Arg Thr Asp Tyr Ala Glu Asn Ala Asn Lys Leu Glu Glu 245 250 Ser Ala Arg. Glu His His Ile Pro Cys Pro Glu His Tyr Asn Gly Phe

265 260 Cys Met His Gly Lys Cys Glu His Ser Ile Asn Met Gln Glu Pro Ser 280 Cys Arg Cys Asp Ala Gly Tyr Thr Gly Gln His Cys Glu Lys Lys Asp 295 300 Tyr Ser Val Leu Tyr Val Val Pro Gly Pro Val Arg Phe Pro Val Cys 310 315 Leu Asn Arg Ser Cys Asp Trp Asn Asn Ser Asp Cys Cys His Leu Cys 330 335 325 Gly Gly Pro Leu His His Lys Glu Met Pro Pro Glu Ala Asn Arg Ile 340 345 Pro Pro Asp Arg Ser Lys Ile Pro Gly His Tyr Ser Ser Arg Gln Tyr 355 360 Asn Lys Ser Arg Pro Thr Arg Leu Ile Leu Lys Gly Ala Cys Phe His 370 375 380 Ser Gly Trp Thr Thr Glu Ser Leu Asp Tyr Thr Ile Gln Tyr Tyr Arg 385 390 395 Gln Lys Asn Lys Thr Arg Asp Leu Thr His Val Cys Leu Ala Phe Val 405 410 Gly Asn Leu His Gln \* 420 421

<210> 1243 <211> 46 <212> PRT

<213> Homo sapiens

<400> 1243 Met Leu Phe Val Phe Ile Cys Ser Tyr Phe His Leu Ser Leu Phe Leu

1 5 10 15 Leu Phe Pro Phe Leu Pro Val Ser Leu Pro Ser Phe Leu Pro Phe Phe 20 25 30

Leu Pro Ser Phe Leu Glu Phe Thr Glu Val Phe Pro Arg \* 35 40 45

<210> 1244 <211> 46 <212> PRT <213> Homo sapiens

<210> 1245 <211> 244 <212> PRT

## <213> Homo sapiens

<400> 1245 Met Ala Gly Val Ile Ala Gly Leu Leu Met Phe Ile Ile Ile Leu Leu 10 Gly Val Met Leu Thr Ile Lys Arg Arg Arg Asn Ala Tyr Ser Tyr Ser 25 Tyr Tyr Leu Lys Leu Ala Lys Lys Gln Lys Glu Thr Gln Ser Gly Ala 40 Gln Arg Glu Met Gly Pro Val Ala Ser Ala Asp Lys Pro Thr Thr Lys 55 Leu Ser Ala Ser Arg Asn Asp Glu Gly Phe Ser Ser Ser Gln Asp Val Asn Gly Phe Asn Gly Ser Arg Gly Glu Leu Ser Gln Pro Thr Leu Thr Ile Gln Thr His Pro Tyr Arg Thr Cys Asp Pro Val Glu Met Ser 100 105 Tyr Pro Arg Asp Gln Phe Gln Pro Ala Ile Arg Val Ala Asp Leu Leu 120 Gln His Ile Thr Gln Met Lys Arg Gly Gln Gly Tyr Gly Phe Lys Glu 135 140 Glu Tyr Glu Ala Leu Pro Glu Gly Gln Thr Ala Ser Trp Asp Thr Ala 150 155 Lys Glu Asp Glu Asn Arg Asn Lys Asn Arg Tyr Gly Asn Ile Ile Ser 165 170 Tyr Asp His Ser Arg Val Arg Leu Leu Val Leu Asp Gly Asp Pro His 185 Ser Asp Tyr Ile Asn Ala Asn Tyr Ile Asp Gly Tyr His Arg Pro Arg 195 200 His Tyr Ile Ala Thr Gln Gly Pro Met Gln Glu Thr Val Lys Asp Phe 215 Trp Arg Met Ile Trp Gln Glu Asn Ser Ala Ser Ile Val Met Val Thr 225 230 235 Asn Pro Gly \* 243

<210> 1246 <211> 565 <212> PRT

<213> Homo sapiens

			7.00					105					110		
V=1	Val	T.011	100	λen	Dhe	Gln	Thr	105	V av	Glv	Ser	Gln	110 Tyr	Asn	Dro
Val	Val	115	1111	тор	1110	0111	120	Leu	пор	Gry	OCL	125	- 7 -	11011	110
Val	Lys 130		Gln	Leu	Val	Arg 135		Ala	Thr	Ser	Cys 140		Ser	Cys	Cys
Pro	Arg	Leu	Ala	Ser	Val		Leu	Tyr	Ser	Asp		Gly	Ile	Gly	Glu
145					150					155					160
Val	Pro	Val	Glu	Pro 165	Leu	Asp	Val	Pro	Leu 170	Pro	Ser	Thr	Ile	Arg 175	Pro
Ala	Ser	Pro	Val 180	Ala	Gly	Ser	Pro	Lys 185	Gln	Pro	Val	Arg	Gly 190	Tyr	Tyr .
Arg	Gly	Ala 195	Val	Gly	Gly	Thr	Phe 200	Asp	Arg	Leu	His	Asn 205	Ala	His	Lys
Val	Leu 210	Leu	Ser	Val	Ala	Cys 215	Ile	Leu	Ala	Gln	Glu 220	Gln	Leu	Val	Val
Gly 225	Val	Ala	Asp	Lys	Asp 230	Leu	Leu	Lys	Ser	Lуs 235	Leu	Leu	Pro	Glu	Leu 240
Leu	Gln	Pro	Tyr	Thr 245	Glu	Arg	Val	Glu	His 250	Leu	Ser	Glu	Phe	Leu 255	Val
Asp	Ile	Lys	Pro 260	Ser	Leu	Thr	Phe	Asp 265	Val	Ile	Pro	Leu	Leu 270	Asp	Pro
Tyr	Gly	Pro 275	Ala	Gly	Ser	Asp	Pro 280	Ser	Leu	Glu	Phe	Leu 285	Val	Val	Ser
Glu	Glu 290	Thr	Tyr	Arg	Gly	Gly 295	Met	Ala	Ile	Asn	Arg 300	Phe	Arg	Leu	Glu
Asn 305	Asp	Leu	Glu	Glu	Leu 310	Ala	Leu	Tyr	Gln	Ile 315	Gln	Leu	Leu	Lys	Asp 320
Leu	Arg	His	Thr	Glu 325	Asn	Glu	Glu	Asp	Lys 330	Val	Ser	Ser	Ser	Ser	Phe
Arg	Gln	Arg	Met 340	Leu	Gly	Asn	Leu	Leu 345	Arg	Pro	Pro	Tyr	Glu 350	Arg	Pro
Glu	Leu	Pro 355	Thr	Cys	Leu	Tyr	Val 360	Ile	Gly	Leu	Thr	Gly 365	Ile	Ser	Gly
Ser	Gly 370	Lys	Ser	Ser	Ile	Ala 375	Gln	Arg	Leu	Lys	Gly 380	Leu	Gly	Ala	Phe
Val 385	Ile	Asp	Ser	Asp	His 390	Leu	Gly	His	Arg	Ala 395	Tyr	Ala	Pro	Gly	Gly 400
Pro	Ala	Tyr	Gln	Pro 405	Val	Val	Glu	Ala	Phe 410	Gly	Thr	Asp	Ile	Leu 415	His
Lys	Asp	Gly	Ile 420	Ile	Asn	Arg	Lys	Val 425	Leu	Gly	Ser	Arg	Val 430	Phe	Gly
Asn	Lys	Lys 435	Gln	Leu	Lys	Ile	Leu 440	Thr	Asp	Ile	Met	Trp 445	Pro	Ile	Ile
Ala	Lys 450	Leu	Ala	Arg	Glu	Glu 455	Met	Asp	Arg	Ala	Val 460	Ala	Glu	Gly	Lys
Arg 465	Val	Cys	Val	Ile	Asp 470	Ala	Ala	Val	Leu	Leu 475	Glu	Ala	Gly	Trp	Gln 480
Asn	Leu	Val	His	Glu 485	Val	Trp	Thr	Ala	Val 490	Ile	Pro	Glu	Thr	Glu 495	Ala
Val	Arg	Arg	Ile 500	Val	Glu	Arg	Asp	Gly 505	Leu	Ser	Glu	Ala	Ala 510	Ala	Gln
Ser	Arg	Leu 515	Gln	Ser	Gln	Met	Ser 520	Gly	Gln-	Gln	Leu	Val 525	Glu	Gln	Ser
His	Val 530	Val	Leu	Ser	Thr	Leu 535		Glu	Pro	His	Ile 540		Gln	Arg	Gln
Val 545	Glu	Lys	Ala	Trp	Ala 550		Leu	Gln	Lys	Arg 555		Pro	Lys	Thr	His 560
Gln	Ala	Leu	Asp 564	*											

<210> 1247 <211> 737 <212> PRT <213> Homo sapiens

<400> 1247 Met Phe Pro Ala Gly Pro Pro Trp Pro Arg Val Arg Val Val Gln Val 10 Leu Trp Ala Leu Leu Ala Val Leu Leu Ala Ser Trp Arg Leu Trp Ala 20 25 Ile Lys Asp Phe Gln Glu Cys Thr Trp Gln Val Val Leu Asn Glu Phe 40 Lys Arg Val Gly Glu Ser Gly Val Ser Asp Ser Phe Phe Glu Gln Glu Pro Val Asp Thr Val Ser Ser Leu Phe His Met Leu Val Asp Ser Pro Ile Asp Pro Ser Glu Lys Tyr Leu Gly Phe Pro Tyr Tyr Leu Lys Ile 85 90 Asn Tyr Ser Cys Glu Glu Lys Pro Ser Glu Asp Leu Val Arg Met Gly 105 His Leu Thr Gly Leu Lys Pro Leu Val Leu Val Thr Phe Gln Ser Pro 120 Val Asn Phe Tyr Arg Trp Lys Ile Glu Gln Leu Gln Ile Gln Met Glu 135 140 Ala Ala Pro Phe Arg Ser Lys Gly Gly Pro Gly Gly Gly Arg Asp 150 155 Arg Asn Leu Ala Gly Met Asn Ile Asn Gly Phe Leu Lys Arg Asp Arg 165 170 Asp Asn Asn Ile Gln Phe Thr Val Gly Glu Glu Leu Phe Asn Leu Met 185 Pro Gln Tyr Phe Val Gly Val Ser Ser Arg Pro Leu Trp His Thr Val 195 200 Asp Gln Ser Pro Val Leu Ile Leu Gly Gly Ile Pro Asn Glu Lys Tyr 215 220 Val Leu Met Thr Asp Thr Ser Phe Lys Asp Phe Ser Leu Val Glu Val 230 235 Asn Gly Val Gly Gln Met Leu Ser Ile Asp Ser Cys Trp Val Gly Ser 245 250 Phe Tyr Cys Pro His Ser Gly Phe Thr Ala Thr Ile Tyr Asp Thr Ile 260 265 Ala Thr Glu Ser Thr Leu Phe Ile Arg Gln Asn Gln Leu Val Tyr Tyr 280 285 Phe Thr Gly Thr Tyr Thr Thr Leu Tyr Glu Arg Asn Arg Gly Ser Gly 295 300 Glu Cys Ala Val Ala Gly Pro Thr Pro Gly Glu Gly Thr Leu Val Asn 310 315 Pro Ser Thr Glu Gly Ser Trp Ile Arg Val Leu Ala Ser Glu Cys Ile 325 330 Lys Lys Leu Cys Pro Val Tyr Phe His Ser Asn Gly Ser Glu Tyr Ile 340 345 Met Ala Leu Thr Thr Gly Lys His Glu Gly Tyr Val His Phe Gly Thr 360 365 Ile Arg Val Thr Thr Cys Ser Ile Ile Trp Ser Glu Tyr Ile Ala Gly 375 380 Glu Tyr Thr Leu Leu Leu Val Glu Ser Gly Tyr Gly Asn Ala Ser

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390
                                   395
Lys Arg Phe Gln Val Val Ser Tyr Asn Thr Ala Ser Asp Asp Leu Glu
             405
                               410
Leu Leu Tyr His Ile Pro Glu Phe Ile Pro Glu Ala Arg Gly Leu Glu
          420
                          425
Phe Leu Met Ile Leu Gly Thr Glu Ser Tyr Thr Ser Thr Ala Met Ala
                        440
                                       445
Pro Lys Gly Ile Phe Cys Asn Pro Tyr Asn Asn Leu Ile Phe Ile Trp
           455
                             460
Gly Asn Phe Leu Leu Gln Ser Ser Asn Lys Glu Asn Phe Ile Tyr Leu
        470 475
Ala Asp Phe Pro Lys Glu Leu Ser Ile Lys Tyr Met Ala Arg Ser Phe
     485
                               490
Arg Gly Ala Val Ala Ile Val Thr Glu Thr Glu Glu Ile Trp Tyr Leu
       500
                           505
Leu Glu Gly Ser Tyr Arg Val Tyr Gln Leu Phe Pro Ser Lys Gly Trp
      515 520
Gln Val His Ile Ser Leu Lys Leu Met Gln Gln Ser Ser Leu Tyr Ala
           535
                                      540
Ser Asn Glu Thr Met Leu Thr Leu Phe Tyr Glu Asp Ser Lys Leu Tyr
                550
                                   555
Gln Leu Val Tyr Leu Met Asn Asn Gln Lys Gly Gln Leu Val Lys Arg
             565
                                570
Leu Val Pro Val Glu Gln Leu Leu Met Tyr Gln Gln His Thr Ser His
                            585
Tyr Asp Leu Glu Arg Lys Gly Gly Tyr Leu Met Leu Ser Phe Ile Asp
                       600
Phe Cys Pro Phe Ser Val Met Arg Leu Arg Ser Leu Pro Ser Pro Gln
                     615
                                      620
Arg Tyr Thr Arg Gln Glu Arg Tyr Arg Ala Arg Pro Pro Arg Val Leu
              630
                                   635
Glu Arg Ser Gly Phe Pro Gln Gly Glu Leu Ala Arg His Leu Pro Gly
             645
                               650
Pro Gly Leu Leu Pro Ala Val Ala Ala Leu Arg Val Arg Gln Ala Val
                           665
Arg Gly Pro Gly Ala Arg Pro His Leu Ala Leu Val Gly Glu Gln Gln
                       680
Thr Arg Pro Gly Leu Leu Leu Leu Gly Glu Gln Leu Ala Lys Arg
          695
                                      700
Gly Arg Arg Val His Arg Asn Gly Gln Leu Arg Lys Asp Leu Gln Pro
              710
                                  715
Arg Val Arg Val Arg Ala Ala Gly Ala His Phe Pro Gly Gln Gly His
                                730
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<210> 1248 <211> 175 <212> PRT <213> Homo sapiens

<400> 1248

Met Gly Trp Val Trp Thr Leu Cys Thr Ala Ser Ala Cys Leu Thr Leu 1 5 15 Leu Phe Trp Ser Gln Thr Pro Gly Lys Ala Phe Gln Ile Pro Cys Pro 20 25 30

Pro Pro His Leu Ser His Trp Cys Leu Ser Pro Met Gln Met Asp Asp 40 Gly Cys Ala Arg Leu Cys Val Leu Trp Thr Ala Trp Met Arg Trp Arg 55 Val Leu Met Cys Ser Cys Arg Val Trp Ala Thr Asp Leu Gly Ile Phe 70 75 Leu Gly Val Ala Leu Gly Asn Glu Pro Leu Glu Met Trp Pro Leu Thr 90 Gln Asn Glu Glu Cys Thr Val Thr Gly Phe Leu Arg Asp Lys Leu Gln 105 Tyr Arg Ser Arg Leu Gln Tyr Met Lys His Tyr Phe Pro Ile Asn Tyr 120 125 Lys Ile Arg Val Pro Tyr Glu Gly Val Phe Arg Ile Ala Asn Val Thr 140 135 Arg Leu Arg Ala Gln Gly Ser Glu Arg Glu Leu Arg Tyr Leu Gly Val 155 150 Leu Val Ser Leu Ser Ala Thr Glu Ser Val His Asp Glu Leu Leu 165 170

<210> 1249 <211> 68 <212> PRT <213> Homo sapiens

<400> 1249

Met Phe His Arg Cys Arg Leu Lys Ala Gly Leu Met Leu Trp Arg Ser 10 15 5 Leu Glu Ser Gly Leu Cys Ala Gly Ala His Arg Leu Trp Leu Glu Gly 20 25 Pro Met Ala Phe Pro Glu Leu Gly Glu Lys Asp Pro Leu Leu Ala Ser 40 Pro Leu Ala Leu Ile Pro Gln Ser Leu Ile Gly Leu Gly Gly Leu Arg 50 55 Gly Ala Trp 65 67

<210> 1250 <211> 209 <212> PRT <213> Homo sapiens

<400> 1250

Met Ser Phe Cys Phe Thr Phe Leu Ser Leu Leu Pro Ala Cys Ile Lys 10 Leu Ile Leu Gln Pro Ser Ser Lys Gly Phe Lys Phe Thr Leu Val Ser 25 Cys Ala Leu Ser Phe Phe Leu Phe Ser Phe Gln Val His Glu Lys Ser 40 Ile Leu Leu Val Ser Leu Pro Val Cys Leu Val Leu Ser Glu Ile Pro 55 60 Phe Met Ser Thr Trp Phe Leu Leu Val Ser Thr Phe Ser Met Leu Pro 70 75 Leu Leu Lys Asp Glu Leu Leu Met Pro Ser Val Val Thr Thr Met

85 90 Ala Phe Phe Ile Ala Cys Val Thr Ser Phe Ser Ile Phe Glu Lys Thr 105 100 Ser Glu Glu Glu Leu Gln Leu Lys Ser Phe Ser Ile Ser Val Arg Lys 120 125 Tyr Leu Pro Cys Phe Thr Phe Leu Ser Arg Ile Ile Gln Tyr Leu Phe 135 140 Leu Ile Ser Val Ile Thr Met Val Leu Leu Thr Leu Met Thr Val Thr 150 155 Leu Asp Pro Pro Gln Lys Leu Pro Asp Leu Phe Ser Val Leu Val Cys 165 170 Phe Val Ser Cys Leu Asn Phe Leu Phe Phe Leu Val Tyr Phe Asn Ile 180 185 190 Ile Ile Met Trp Asp Ser Lys Ser Gly Arg Asn Gln Lys Lys Ile Ser 200 205

<210> 1251 <211> 58 <212> PRT <213> Homo sapiens

<400> 1251

<210> 1252 <211> 84 <212> PRT <213> Homo sapiens

<210> 1253 <211> 73 <212> PRT <213> Homo sapiens

<210> 1254 <211> 209 <212> PRT <213> Homo sapiens

<400> 1254 Met Ser Phe Cys Phe Thr Phe Leu Ser Leu Leu Pro Ala Cys Ile Lys Leu Ile Leu Gln Pro Ser Ser Lys Gly Phe Lys Phe Thr Leu Val Ser 20 25 Cys Ala Leu Ser Phe Phe Leu Phe Ser Phe Gln Val His Glu Lys Ser 40 Ile Leu Leu Val Ser Leu Pro Val Cys Leu Val Leu Ser Glu Ile Pro 55 Phe Met Ser Thr Trp Phe Leu Leu Val Ser Thr Phe Ser Met Leu Pro 70 Leu Leu Lys Asp Glu Leu Leu Met Pro Ser Val Val Thr Thr Met 85 90 Ala Phe Phe Ile Ala Cys Val Thr Ser Phe Ser Ile Phe Glu Lys Thr 105 Ser Glu Glu Glu Leu Gln Leu Lys Ser Phe Ser Ile Ser Val Arg Lys 120 125 Tyr Leu Pro Cys Phe Thr Phe Leu Ser Arg Ile Ile Gln Tyr Leu Phe 135 Leu Ile Ser Val Ile Thr Met Val Leu Leu Thr Leu Met Thr Val Thr 150 155 Leu Asp Pro Pro Gln Lys Let Pro Asp Leu Phe Ser Val Leu Val Cys 165 170 Phe Val Ser Cys Leu Asn Phe Leu Phe Phe Leu Val Tyr Phe Asn Ile 180 185 190 Ile Ile Met Trp Asp Ser Lys Ser Gly Arg Asn Gln Lys Lys Ile Ser 200

<210> 1255 <211> 730 <212> PRT <213> Homo sapiens

<400> 1255 Met Gly Pro Trp Gly Trp Lys Leu Arg Trp Thr Val Ala Leu Leu Leu 10 Ala Ala Ala Gly Thr Ala Val Gly Asp Arg Cys Glu Arg Asn Glu Phe Gln Cys Gln Asp Gly Lys Cys Ile Ser Tyr Lys Trp Val Cys Asp Gly Ser Ala Glu Cys Gln Asp Gly Ser Asp Glu Ser Gln Glu Thr Cys Leu 55 Ser Val Thr Cys Lys Ser Gly Asp Phe Ser Cys Gly Gly Arg Val Asn 70 75 Arg Cys Ile Pro Gln Phe Trp Arg Cys Asp Gly Gln Val Asp Cys Asp 85 90 Asn Gly Ser Asp Glu Gln Gly Cys Pro Pro Lys Thr Cys Ser Gln Asp 100 105 Glu Phe Arg Cys His Asp Gly Lys Cys Ile Ser Arg Gln Phe Val Cys 115 120 125 Asp Ser Asp Arg Asp Cys Leu Asp Gly Ser Asp Glu Ala Ser Cys Pro 135 140 Val Leu Thr Cys Gly Pro Ala Ser Phe Gln Cys Asn Ser Ser Thr Cys 150 155 Ile Pro Gln Leu Trp Ala Cys Asp Asn Asp Pro Asp Cys Glu Asp Gly 165 170 Ser Asp Glu Trp Pro Gln Arg Cys Arg Gly Leu Tyr Val Phe Gln Gly 185 Asp Ser Ser Pro Cys Ser Ala Phe Glu Phe His Cys Leu Ser Gly Glu 200 Cys Ile His Ser Ser Trp Arg Cys Asp Gly Gly Pro Asp Cys Lys Asp 215 Lys Ser Asp Glu Glu Asn Cys Ala Val Ala Thr Cys Arg Pro Asp Glu 230 235 Phe Gln Cys Ser Asp Gly Asn Cys Ile His Gly Ser Arg Gln Cys Asp 250 Arg Glu Tyr Asp Cys Lys Asp Met Ser Asp Glu Val Gly Cys Val Asn 265 270 Val Thr Leu Cys Glu Gly Pro Asn Lys Phe Lys Cys His Ser Gly Glu 280 Cys Ile Thr Leu Asp Lys Val Cys Asn Met Ala Arg Asp Cys Arg Asp 295 300 Trp Ser Asp Glu Pro Ile Lys Glu Cys Gly Thr Asn Glu Cys Leu Asp 310 315 Asn Asn Gly Gly Cys Ser His Val Cys Asn Asp Leu Lys Ile Gly Tyr 325 330 Glu Cys Leu Cys Pro Asp Gly Phe Gln Leu Val Ala Gln Arg Arg Cys 345 Glu Asp Ile Asp Glu Cys Gln Asp Pro Asp Thr Cys Ser Gln Leu Cys 360 Val Asn Leu Glu Gly Gly Tyr Lys Cys Gln Cys Glu Glu Gly Phe Gln 375 380 Leu Asp Pro His Thr Lys Ala Cys Lys Ala Val Gly Ser Ile Ala Tyr 390 395 Leu Phe Phe Thr Asn Arg His Glu Val Arg Lys Met Thr Leu Asp Arg

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Ser Glu Tyr Thr Ser Leu Ile Pro Asn Leu Arg Asn Val Val Ala Leu
                              425
Asp Thr Glu Val Ala Ser Asn Arg Ile Tyr Trp Ser Asp Leu Ser Gln
                          440
Arg Met Ile Cys Ser Thr Gln Leu Asp Arg Ala His Gly Val Ser Ser
                     455
Tyr Asp Thr Val Ile Ser Arg Asp Ile Gln Ala Pro Asp Gly Leu Ala
                 470
                                     475
Val Asp Trp Ile His Ser Asn Ile Tyr Trp Thr Asp Ser Val Leu Gly
              485
                                  490
Thr Val Ser Val Ala Asp Thr Lys Gly Val Lys Arg Lys Thr Leu Phe
                              505
Arg Glu Asn Gly Ser Lys Pro Arg Ala Ile Val Val Asp Pro Val His
                          520
Gly Phe Met Tyr Trp Thr Asp Trp Gly Thr Pro Ala Lys Ile Lys Lys
                      535
Gly Gly Leu Asn Gly Val Asp Ile Tyr Ser Leu Val Thr Glu Asn Ile
                  550
                                     555
Gln Trp Pro Asn Gly Ile Thr Leu Asp Leu Leu Ser Gly Arg Leu Tyr
             565
                                 570
Trp Val Asp Ser Lys Leu His Ser Ile Ser Ser Ile Asp Val Asn Gly
                585
Gly Asn Arg Lys Thr Ile Leu Glu Asp Glu Lys Arg Leu Ala His Pro
      595
                         600
Phe Ser Leu Ala Val Phe Glu Asp Lys Val Phe Trp Thr Asp Ile Ile
                   615
                                        620
Asn Glu Ala Ile Phe Ser Ala Asn Arg Leu Thr Gly Ser Asp Val Asn
                  630
                                     635
Leu Leu Ala Glu Asn Leu Leu Ser Pro Glu Asp Met Val Leu Phe His
                                  650
Asn Leu Thr Gln Pro Arg Gly Val Asn Trp Cys Glu Arg Thr Thr Leu
           660
                              665
Ser Asn Gly Gly Cys Gln Tyr Leu Cys Leu Pro Ala Pro Gln Ile Asn
                          680
Pro His Ser Pro Lys Phe Thr Cys Ala Cys Pro Asp Gly Met Leu Leu
                      695
                                         700
Ala Arg Gly His Glu Glu Leu Pro His Arg Gly Leu Arg Leu Gln Trp
        710
Pro Pro Arg Arg His Pro Pro Ser Gly *
               725
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<210> 1256 <211> 264 <212> PRT <213> Homo sapiens

70 Arg His Gly Lys Ile Gly Pro Ile Gly Ser Lys Gly Glu Lys Gly Asp 85 90 Ser Gly Asp Ile Gly Pro Pro Gly Pro Asn Gly Glu Pro Gly Leu Pro 105 Cys Glu Cys Ser Gln Leu Arg Lys Ala Ile Gly Glu Met Asp Asn Gln 120 115 Val Ser Gln Leu Thr Ser Glu Leu Lys Phe Ile Lys Asn Ala Val Ala 135 140 Gly Val Arg Glu Thr Glu Ser Lys Ile Tyr Leu Leu Val Lys Glu Glu 150 155 Lys Arg Tyr Ala Asp Ala Gln Leu Ser Cys Gln Gly Arg Gly Gly Thr 165 170 Leu Ser Met Pro Lys Asp Glu Ala Ala Asn Gly Leu Met Ala Ala Tyr 185 180 Leu Ala Gln Ala Gly Leu Ala Arg Val Phe Ile Gly Ile Asn Asp Leu 200 Glu Lys Glu Gly Ala Phe Val Tyr Ser Asp His Ser Pro Met Arg Thr 215 Phe Asn Lys Trp Arg Ser Gly Glu Pro Asn Asn Ala Tyr Asp Glu Glu 230 235 Asp Cys Val Glu Met Val Ala Ser Gly Gly Trp Asn Asp Val Ala Cys 245 250 His Thr Thr Met Tyr Phe Met \* . 263

<210> 1257 <211> 407 <212> PRT <213> Homo sapiens

<400> 1257 Met Ser Gly Ala Pro Thr Ala Gly Ala Ala Leu Met Leu Cys Ala Ala 10 Thr Ala Val Leu Leu Ser Ala Gln Gly Gly Pro Val Gln Ser Lys Ser Pro Arg Phe Ala Ser Trp Asp Glu Met Asn Val Leu Ala His Gly Leu Leu Gln Leu Gly Gln Gly Leu Arg Glu His Ala Glu Arg Thr Arg Ser 55 Gln Leu Ser Ala Leu Glu Arg Arg Leu Ser Ala Cys Gly Ser Ala Cys Gln Gly Thr Glu Gly Ser Thr Asp Leu Pro Leu Ala Pro Glu Ser Arg 90 Val Asp Pro Glu Val Leu His Ser Leu Gln Thr Gln Leu Lys Ala Gln 105 Asn Ser Arg Ile Gln Gln Leu Phe His Lys Val Ala Gln Gln Gln Arg 120 His Leu Glu Lys Gln His Leu Arg Ile Gln His Leu Gln Ser Gln Phe 135 140 Gly Leu Leu Asp His Lys His Leu Asp His Glu Val Ala Lys Pro Ala 150 155 Arg Arg Lys Arg Leu Pro Glu Met Ala Gln Pro Val Asp Pro Ala His 170 Asn Val Ser Arg Leu His Arg Leu Pro Arg Asp Cys Gln Glu Leu Phe 180 185

Gln Val Gly Glu Arg Gln Ser Gly Leu Phe Glu Ile Gln Pro Gln Gly 200 Ser Pro Pro Phe Leu Val Asn Cys Lys Met Thr Ser Asp Gly Gly Trp 215 220 Thr Val Ile Gln Arg Arg His Asp Gly Ser Val Asp Phe Asn Arg Pro 230 235 Trp Glu Ala Tyr Lys Ala Gly Phe Gly Asp Pro His Gly Glu Phe Trp 245 250 Leu Gly Leu Glu Lys Val His Ser Ile Thr Gly Asp Arg Asn Ser Arg 265 Leu Ala Val Gln Leu Arg Asp Trp Asp Gly Asn Ala Glu Leu Leu Gln 280 285 Phe Ser Val His Leu Gly Gly Glu Asp Thr Ala Tyr Ser Leu Gln Leu 295 300 Thr Ala Pro Val Ala Gly Gln Leu Gly Ala Thr Thr Val Pro Pro Ser 310 315 Gly Leu Ser Val Pro Phe Ser Thr Trp Asp Gln Asp His Asp Leu Arg 325 330 Arg Asp Lys Asn Cys Ala Lys Ser Leu Ser Gly Gly Trp Trp Phe Gly 345 Thr Cys Ser His Ser Asn Leu Asn Gly Gln Tyr Phe Arg Ser Ile Pro 355 360 Gln Gln Arg Gln Lys Leu Lys Lys Gly Ile Phe Trp Lys Thr Trp Arg 375 380 Gly Arg Tyr Tyr Pro Leu Gln Ala Thr Thr Met Leu Ile Gln Pro Met 390 Ala Ala Glu Ala Ala Ser \* 405 406

<210> 1258 <211> 120 <212> PRT

<213> Homo sapiens

<400> 1258 Met Met Thr Pro Lys Leu Met Ile Trp Leu Leu Gln Ala Lys Ser 10 Ser Ile Ser Met Leu Glu Lys Ser Ser Lys Cys Leu Gly Arg Cys Phe 25 Ser Ser Phe Ala Lys Asn Leu Val Met Ile Gln Ser Cys Val Ser Trp 40 Ala Leu Met Ser Glu Asn Phe Tyr Arg Thr Leu Met Leu Cys Thr Thr 55 Thr Leu Leu Pro Ser Thr Gln Glu Cys Val His Leu Pro Leu Gly Ala 75 Leu Met Gln Lys Arg Ala Lys Asp Ser Phe Cys Thr Thr Thr Gln Arg . 90 Glu Lys Asp Phe Arg Ile Leu Ser Leu Glu Ser Ser Lys Gln Trp His 100 105 Asn Lys Ser Met Ala Leu Lys \* 119 115

<210> 1259 <211> 160

<212> PRT <213> Homo sapiens

<400> 1259 Met Val Cys Leu Arg Leu Pro Gly Gly Ser Cys Met Ala Val Leu Thr 10 Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala Leu Ala Gly Asp Thr 20 25 Arg Pro Arg Phe Leu Glu Tyr Ser Thr Gly Glu Cys Tyr Phe Phe Asn 40 Gly Thr Glu Arg Val Arg Phe Leu Asp Arg Tyr Phe Tyr Asn Gln Glu Glu Tyr Val Arg Phe Asp Ser Asp Val Gly Glu Tyr Arg Ala Val Thr 70 Glu Leu Gly Arg Pro Asp Ala Glu Tyr Leu Glu Gln Pro Glu Gly Arg 85 90 Pro Trp Asn Ser Gln Lys Asp Ile Leu Glu Asp Glu Arg Ala Ala Val 105 Asp Thr Tyr Cys Arg His Asn Tyr Gly Val Val Glu Ser Phe Thr Val 120 Gln Arg Arg Val His Pro Lys Val Thr Val Tyr Pro Ser Lys Thr Gln 135 140 Pro Leu Gln Ala Pro Gln Pro Ala Val Leu Phe Cys Glu Trp Phe \*

<210> 1260 <211> 111 <212> PRT

<213> Homo sapiens

<400> 1260 Met Leu Thr Phe Leu Met Leu Val Arg Leu Ser Thr Leu Cys Pro Ser 5 10 Ala Val Leu Gln Arg Leu Asp Arg Leu Val Glu Pro Leu Arg Ala Thr 25 Cys Thr Thr Lys Val Lys Ala Asn Ser Val Lys Gln Glu Phe Glu Lys 40 Gln Asp Glu Leu Lys Arg Ser Ala Met Arg Ala Val Ala Ala Leu Leu Thr Ile Pro Glu Ala Glu Lys Ser Pro Leu Met Ser Glu Phe Gln Ser 75 70 Gln Ile Ser Ser Asn Pro Glu Leu Ala Ala Ile Phe Glu Ser Ile Gln 90 Lys Asp Ser Ser Ser Thr Asn Leu Glu Ser Met Asp Thr Ser \* 105

<210> 1261 <211> 123 <212> PRT <213> Homo sapiens

<400> 1261

Met Ile Pro Ala Arg Phe Ala Gly Val Leu Leu Ala Leu Ala Leu Ile 10 Leu Pro Gly Thr Leu Cys Ala Glu Gly Thr Arg Gly Arg Ser Ser Thr 25 Ala Arg Cys Ser Leu Phe Gly Ser Asp Phe Val Asn Thr Phe Asp Gly 40 Ser Met Tyr Ser Phe Ala Gly Tyr Cys Ser Tyr Leu Leu Ala Gly Gly 60 Cys Gln Lys Arg Ser Phe Ser Ile Ile Gly Asp Phe Gln Asn Gly Lys 70 75 Arg Val Ser Leu Ser Val Tyr Leu Gly Glu Phe Phe Asp Ile His Leu 85 90 Phe Val Asn Gly Thr Val Thr Gln Gly Asp Gln Arg Val Ser Met Pro 100 105 Tyr Ala Ser Lys Gly Leu Tyr Leu Glu Thr \* 115 120

<210> 1262 <211> 737 <212> PRT <213> Homo sapiens

<400> 1262 Met Phe Pro Ala Gly Pro Pro Trp Pro Arg Val Arg Val Val Gln Val Leu Trp Ala Leu Leu Ala Val Leu Leu Ala Ser Trp Arg Leu Trp Ala 20 25 Ile Lys Asp Phe Gln Glu Cys Thr Trp Gln Val Val Leu Asn Glu Phe 40 Lys Arg Val Gly Glu Ser Gly Val Ser Asp Ser Phe Phe Glu Gln Glu Pro Val Asp Thr Val Ser Ser Leu Phe His Met Leu Val Asp Ser Pro 70 75 Ile Asp Pro Ser Glu Lys Tyr Leu Gly Phe Pro Tyr Tyr Leu Lys Ile 85 90 Asn Tyr Ser Cys Glu Glu Lys Pro Ser Glu Asp Leu Val Arg Met Gly 105 His Leu Thr Gly Leu Lys Pro Leu Val Leu Val Thr Phe Gln Ser Pro 120 Val Asn Phe Tyr Arg Trp Lys Ile Glu Gln Leu Gln Ile Gln Met Glu 135 140 Ala Ala Pro Phe Arg Ser Lys Gly Gly Pro Gly Gly Gly Arg Asp 150 155 Arg Asn Leu Ala Gly Met Asn Ile Asn Gly Phe Leu Lys Arg Asp Arg 165 170 Asp Asn Asn Ile Gln Phe Thr Val Gly Glu Glu Leu Phe Asn Leu Met 180 185 Pro Gln Tyr Phe Val Gly Val Ser Ser Arg Pro Leu Trp His Thr Val 195 200 Asp Gln Ser Pro Val Leu Ile Leu Gly Gly Ile Pro Asn Glu Lys Tyr 215 220 Val Leu Met Thr Asp Thr Ser Phe Lys Asp Phe Ser Leu Val Glu Val 230 235 Asn Gly Val Gly Gln Met Leu Ser Ile Asp Ser Cys Trp Val Gly Ser 250 Phe Tyr Cys Pro His Ser Gly Phe Thr Ala Thr Ile Tyr Asp Thr Ile

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265
           260
Ala Thr Glu Ser Thr Leu Phe Ile Arg Gln Asn Gln Leu Val Tyr Tyr
                          280
Phe Thr Gly Thr Tyr Thr Thr Leu Tyr Glu Arg Asn Arg Gly Ser Gly
                       295
Glu Cys Ala Val Ala Gly Pro Thr Pro Gly Glu Gly Thr Leu Val Asn
                  310
                                      315
Pro Ser Thr Glu Gly Ser Trp Ile Arg Val Leu Ala Ser Glu Cys Ile
              325
                                  330
                                                      335
Lys Lys Leu Cys Pro Val Tyr Phe His Ser Asn Gly Ser Glu Tyr Ile
                    345
           340
Met Ala Leu Thr Thr Gly Lys His Glu Gly Tyr Val His Phe Gly Thr
                          360
                                               365
Ile Arg Val Thr Thr Cys Ser Ile Ile Trp Ser Glu Tyr Ile Ala Gly
                       375
                                           380
Glu Tyr Thr Leu Leu Leu Val Glu Ser Gly Tyr Gly Asn Ala Ser
                   390
                                       395
Lys Arg Phe Gln Val Val Ser Tyr Asn Thr Ala Ser Asp Asp Leu Glu
               405
                                   410
Leu Leu Tyr His Ile Pro Glu Phe Ile Pro Glu Ala Arg Gly Leu Glu
           420
                               425
                                                   430
Phe Leu Met Ile Leu Gly Thr Glu Ser Tyr Thr Ser Thr Ala Met Ala
                          440
Pro Lys Gly Ile Phe Cys Asn Pro Tyr Asn Asn Leu Ile Phe Ile Trp
                       455
Gly Asn Phe Leu Leu Gln Ser Ser Asn Lys Glu Asn Phe Ile Tyr Leu
                  470
                                      475
Ala Asp Phe Pro Lys Glu Leu Ser Ile Lys Tyr Met Ala Arg Ser Phe
              485
                                   490
Arg Gly Ala Val Ala Ile Val Thr Glu Thr Glu Glu Ile Trp Tyr Leu
           500
                               505
Leu Glu Gly Ser Tyr Arg Val Tyr Gln Leu Phe Pro Ser Lys Gly Trp
       515
                          520
Gln Val His Ile Ser Leu Lys Leu Met Gln Gln Ser Ser Leu Tyr Ala
                      535
                                          540
Ser Asn Glu Thr Met Leu Thr Leu Phe Tyr Glu Asp Ser Lys Leu Tyr
                  550
                                      555
Gln Leu Val Tyr Leu Met Asn Asn Gln Lys Gly Gln Leu Val Lys Arg
                                  570
Leu Val Pro Val Glu Gln Leu Leu Met Tyr Gln Gln His Thr Ser His
           580
                              585
Tyr Asp Leu Glu Arg Lys Gly Gly Tyr Leu Met Leu Ser Phe Ile Asp
                                    605
                          600
Phe Cys Pro Phe Ser Val Met Arg Leu Arg Ser Leu Pro Ser Pro Gln
                       615
                                          620
Arg Tyr Thr Arg Gln Glu Arg Tyr Arg Ala Arg Pro Pro Arg Val Leu
                                       635
Glu Arg Ser Gly Phe Pro Gln Gly Glu Leu Ala Arg His Leu Pro Gly
Pro Gly Leu Leu Pro Ala Val Ala Ala Leu Arg Val Arg Gln Ala Val
                               665
Arg Gly Pro Gly Ala Arg Pro His Leu Ala Leu Val Gly Glu Gln Gln
                           680
                                               685
Thr Arg Pro Gly Leu Leu Leu Leu Gly Glu Gln Leu Ala Lys Arg
                       695
Gly Arg Arg Val His Arg Asn Gly Gln Leu Arg Lys Asp Leu Gln Pro
                   710
                                       715
Arg Val Arg Val Arg Ala Ala Gly Ala His Phe Pro Gly Gln Gly His
               725
                                   730
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<210> 1263 <211> 48 <212> PRT <213> Homo sapiens

<210> 1264 <211> 61 <212> PRT <213> Homo sapiens

<210> 1265 <211> 58 <212> PRT <213> Homo sapiens

<210> 1266 <211> 148

<212> PRT <213> Homo sapiens

<400> 1266 Met Ala Leu Gln Leu Trp Ala Leu Thr Leu Leu Gly Leu Leu Gly Ala 10 Gly Ala Ser Leu Arg Pro Arg Lys Leu Asp Phe Phe Arg Ser Glu Lys 20 Glu Leu Asn His Leu Ala Val Asp Glu Ala Ser Gly Val Val Tyr Leu 40 Gly Ala Val Asn Ala Leu Tyr Gln Leu Asp Ala Lys Leu Gln Leu Glu 55 60 Gln Gln Val Ala Thr Gly Pro Val Leu Asp Asn Lys Lys Cys Thr Pro 75 Pro Ile Glu Ala Ser Gln Cys His Glu Ala Glu Met Thr Asp Asn Val 90 Asn Gln Leu Leu Val Asp Pro Pro Arg Lys Arg Leu Val Glu Cys 100 105 Gly Gln Leu Leu Lys Gly Ile Leu Arg Ser Ala Arg Pro Glu Gln His 120 125 Leu Pro Pro Pro Val Leu Arg Gly Arg Gln Arg Gly Glu Val Phe Arg 135 Gly Gln Gln \* 145 147

<210> 1267 <211> 227 <212> PRT <213> Homo sapiens

<400> 1267 Met Arg Trp Leu Trp Pro Leu Ala Val Ser Leu Ala Val Ile Leu Ala 10 Val Gly Leu Ser Arg Val Ser Gly Gly Ala Pro Leu His Leu Gly Arg 20 25 His Arg Ala Glu Thr Gln Glu Gln Gln Ser Arg Ser Lys Arg Gly Thr 35 40 Glu Asp Glu Glu Ala Lys Gly Val Gln Gln Tyr Val Pro Glu Glu Trp 55 Ala Glu Tyr Pro Arg Pro Ile His Pro Ala Gly Leu Gln Pro Thr Lys 70 75 Pro Leu Val Ala Thr Ser Pro Asn Pro Asp Lys Asp Gly Gly Thr Pro 90 Asp Ser Gly Gln Glu Leu Arg Gly Asn Leu Thr Gly Ala Pro Gly Gln 100 Arg Leu Gln Ile Gln Asn Pro Leu Tyr Pro Val Thr Glu Ser Ser Tyr 120 125 Ser Ala Tyr Ala Ile Met Leu Leu Ala Leu Val Glu Phe Ala Ala Gly 135 Ile Val Gly Asn Leu Ser Val Met Cys Ile Ala Trp His Ser Tyr Tyr 150 155 Leu Lys Ser Ala Trp Asn Ser Ile Leu Ala Ser Leu Ala Leu Trp Asp 165 170 175 Phe Leu Val Leu Phe Phe Cys Leu Pro Ile Val Ile Leu Asn Glu Ile 180

Thr Lys Gln Arg Leu Leu Gly Asp Ala Pro Cys Pro Cys Arg Ala Leu 195 200 205

His Gly Gly Leu Leu Ser Gly Ser His Asp Phe Gln Pro Leu Cys Pro 210 220

Gly His \*

225 226

<210> 1268 <211> 983 <212> PRT <213> Homo sapiens

<400> 1268 Met Leu Gly Asn Val Leu Leu Leu Cys Phe Phe Val Phe Phe Ile Phe 10 Gly Ile Val Gly Val Gln Leu Trp Ala Gly Leu Leu Arg Asn Arg Cys 20 25 Phe Leu Pro Glu Asn Phe Ser Leu Pro Leu Ser Val Asp Leu Glu Arg 40 Tyr Tyr Gln Thr Glu Asn Glu Asp Glu Ser Pro Phe Ile Cys Ser Gln Pro Arg Glu Asn Gly Met Arg Ser Cys Arg Ser Val Pro Thr Leu Arg 70 75 Gly Asp Gly Gly Gly Pro Pro Cys Gly Leu Asp Tyr Glu Ala Tyr 90 85 Asn Ser Ser Ser Asn Thr Thr Cys Val Asn Trp Asn Gln Tyr Tyr Thr 105 Asn Cys Ser Ala Gly Glu His Asn Pro Phe Lys Gly Ala Ile Asn Phe 120 Asp Asn Ile Gly Tyr Ala Trp Ile Ala Ile Phe Gln Val Ile Thr Leu 135 Glu Gly Trp Val Asp Ile Met Tyr Phe Val Met Asp Ala His Ser Phe 150 155 Tyr Asn Phe Ile Tyr Phe Ile Leu Leu Ile Ile Val Gly Ser Phe Phe 170 Met Ile Asn Leu Cys Leu Val Val Ile Ala Thr Gln Phe Ser Glu Thr 185 Lys Gln Arg Glu Ser Gln Leu Met Arg Glu Gln Arg Val Arg Phe Leu 200 Ser Asn Ala Ser Thr Leu Ala Ser Phe Ser Glu Pro Gly Ser Cys Tyr 215 220 Glu Glu Leu Leu Lys Tyr Leu Val Tyr Ile Leu Arg Lys Ala Ala Arg 230 235 Arg Leu Ala Gln Val Ser Arg Ala Ala Gly Val Arg Val Gly Leu Leu 245 250 Ser Ser Pro Ala Pro Leu Gly Gly Glu Thr Gln Pro Ser Ser Ser 260 265 Cys Ser Arg Ser His Arg Arg Leu Ser Val His His Leu Val His His 280 His His His His His His Tyr His Leu Gly Asn Gly Thr Leu Arg 295 300 Ala Pro Arg Ala Ser Pro Glu Ile Gln Asp Arg Asp Ala Asn Gly Ser 310 315 Arg Arg Leu Met Leu Pro Pro Pro Ser Thr Pro Ala Leu Ser Gly Ala 325 . 330 Pro Pro Gly Gly Ala Glu Ser Val His Ser Phe Tyr His Ala Asp Cys

			340					345					350		
His	Leu	Glu 355		Val	Arg	Cys	Gln 360		Pro	Pro	Pro	Arg 365		Pro	Ser
Glu	Ala 370	Ser	Gly	Arg	Thr	Val 375	Gly	Ser	Gly	Lys	Val 380	Tyr	Pro	Thr	Val
His 385	Thr	Ser	Pro	Pro	Pro 390	Glu	Thr	Leu	Lys	Glu 395	ŗÀs	Ala	Leu	Val	Glu 400
Val	Ala	Ala	Ser	Ser 405	Gly	Pro	Pro	Thr	Leu 410	Thr	Ser	Leu	Asn	Ile 415	Pro
	_		420		Ser			425					430		
		435			Ser		440					445			
Asp	Ser 450	Gly	Ala	Cys	Gly	Pro 455	Asp	Ser	Cys	Pro	Tyr 460	Cys	Ala	Arg	Ala
465		_			Glu 470			-	_	475			-		480
				485	Glu				490					495	
_	-		500		Arg	•		505			•		510		
		515			Ala		520	_			-	525			_
	530				Lys	535					540				
545					Ser 550					555					560
				565	Leu -				570					575	
			580		Leu		-	585			-	_	590		-
		595			Tyr		600		•			605			
	610				Val	615					620				
625					Met 630				_	635	-				640
			_	645	Leu				650	-			_	655	
			660		Leu			665					670		
		675	_	_	Phe	_	680		_	_	_	685	_		
_	690			_	Arg	695			_		700		_		
705					Ile 710					715					720
				725	Ser				730					735	
			740		Gly			745					750		
		755			Phe		760					765			
	770				Phe	775					780	_	_		_
785					Leu 790					795					800
nya	ser	TEU	₽eu	805	Pro	₽eu	тте	ттё	810	TIII	wrg	wrg	ınr	815	met

Ser Leu Pro Lys Ser Thr Ser Thr Gly Leu Gly Glu Ala Leu Gly Pro 820 825 Ala Ser Arg Arg Thr Ser Ser Ser Gly Ser Ala Glu Pro Gly Ala Ala 840 845 His Glu Met Lys Ser Pro Pro Ser Ala Arg Ser Ser Pro His Ser Pro 855 860 Trp Ser Ala Ala Ser Ser Trp Thr Ser Arg Arg Ser Ser Arg Asn Ser 865 870 875 Leu Gly Arg Ala Pro Ser Leu Lys Arg Arg Ser Pro Ser Gly Glu Arg 885 890 Arg Ser Leu Leu Ser Gly Glu Gly Gln Glu Ser Gln Asp Glu Glu Glu 905 Ser Ser Glu Glu Gry Arg Ala Ser Pro Ala Gly Ser Asp His Arg His 920 Arg Gly Ser Leu Glu Arg Glu Ala Lys Ser Ser Phe Asp Leu Pro Asp 935 940 Thr Leu Gln Val Pro Gly Leu His Arg Thr Ala Ser Gly Arg Gly Ser 955 950 Ala Ser Glu His Gln Gly Leu Gln Trp Gln Val Gly Phe Arg Ala Pro 965 970 Gly Pro Gly Pro Ala Ala \* 980

<210> 1269 <211> 708 <212> PRT

<213> Homo sapiens

## <400> 1269

Met Leu Ser Leu Arg Arg Cys Thr Ser Met Arg Leu Cys Leu Ser Ser 5 10 Ser Leu Ala Ser Pro Cys Ser Thr Met Leu Ser Thr Val Val Leu Tyr 25 Lys Val Cys Asn Ser Phe Val Glu Met Gly Ser Ala Asn Val Gln Ala 40 Thr Asp Tyr Leu Lys Gly Val Ala Ser Leu Phe Val Val Ser Leu Gly 55 60 Gly Ala Ala Val Gly Leu Val Phe Ala Phe Leu Leu Ala Leu Thr Thr 70 75 Arg Phe Thr Lys Arg Val Arg Ile Ile Glu Pro Leu Leu Val Phe Leu Leu Ala Tyr Ala Ala Tyr Leu Thr Ala Glu Met Ala Ser Leu Ser Ala 105 Ile Leu Ala Val Thr Met Cys Gly Leu Gly Cys Lys Lys Tyr Val Glu 120 Ala Asn Ile Ser His Lys Ser Arg Thr Thr Val Lys Tyr Thr Met Lys 135 140 Thr Leu Ala Ser Cys Ala Glu Thr Val Ile Phe Met Leu Leu Gly Ile 150 155 Ser Thr Val Asp Ser Ser Lys Trp Ala Trp Asp Ser Gly Leu Val Leu 170 Gly Thr Leu Ile Phe Ile Leu Phe Phe Arg Ala Leu Gly Val Val Leu 185 Gln Thr Trp Val Leu Asn Gln Phe Arg Leu Val Pro Leu Asp Lys Ile 200 Asp Gln Val Val Met Ser Tyr Gly Gly Leu Arg Gly Ala Val Ala Phe

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215
                                         220
Ala Leu Val Ile Leu Leu Asp Arg Thr Lys Val Pro Ala Lys Asp Tyr
            230
                                     235
Phe Val Ala Thr Thr Ile Val Val Val Phe Phe Thr Val Ile Val Gln
                                  250
              245
Gly Leu Thr Ile Lys Pro Leu Val Lys Trp Leu Lys Val Lys Arg Ser
                            265
                                                270
Glu His His Lys Pro Thr Leu Asn Gln Glu Leu His Glu His Thr Phe
                       280
                                            285
Asp His Ile Leu Ala Ala Val Glu Asp Val Val Gly His His Gly Tyr
                                         300
                     295
His Tyr Trp Arg Asp Arg Trp Glu Gln Phe Asp Lys Lys Tyr Leu Ser
                                     315
                 310
Gln Leu Leu Met Arg Arg Ser Ala Tyr Arg Ile Arg Asp Gln Ile Trp
                                 330
Asp Val Tyr Tyr Arg Leu Asn Ile Arg Asp Ala Ile Ser Phe Val Asp
           340
                   345
Gln Gly Gly His Val Leu Ser Ser Thr Gly Leu Thr Leu Pro Ser Met
               360
                                   365
       355
Pro Ser Arg Asn Ser Val Ala Glu Thr Ser Val Thr Asn Leu Leu Arg
                      375
                                         380
Glu Ser Gly Ser Gly Ala Cys Leu Asp Leu Gln Val Ile Asp Thr Val
                  390
                                      395
Arg Ser Gly Arg Asp Arg Glu Asp Ala Val Met His His Leu Leu Cys
               405
                                  410
Gly Gly Leu Tyr Lys Pro Arg Arg Tyr Lys Ala Ser Cys Ser Arg
                              425
           420
His Phe Ile Ser Glu Asp Ala Gln Glu Arg Gln Asp Lys Glu Val Phe
                          440
Gln Gln Asn Met Lys Arg Arg Leu Glu Ser Phe Lys Ser Thr Lys His
                      455
                                         460
Asn Ile Cys Phe Thr Lys Ser Lys Pro Arg Pro Arg Lys Thr Gly Arg
                 470
                                     475
Arg Lys Lys Asp Gly Val Ala Asn Ala Glu Ala Thr Asn Gly Lys His
              485
                                  490
Arg Gly Leu Gly Phe Gln Asp Thr Ala Ala Val Ile Leu Thr Val Glu
                              505
Ser Glu Glu Glu Glu Glu Ser Asp Ser Ser Glu Thr Glu Lys Glu
                          520
                                             525
Asp Asp Glu Gly Ile Ile Phe Val Ala Arg Ala Thr Ser Glu Val Leu
                      535
                                         540
Gln Glu Gly Lys Val Ser Gly Ser Leu Glu Val Cys Pro Ser Pro Arg
                                     555
                  550
Ile Ile Pro Pro Ser Pro Thr Cys Ala Glu Lys Glu Leu Pro Trp Lys
                                  570
Ser Gly Gln Gly Asp Leu Ala Val Tyr Val Ser Ser Glu Thr Thr Lys
                   585
Ile Val Pro Val Asp Met Gln Thr Gly Trp Asn Gln Ser Ile Ser Ser
                                             605
                         600
Leu Glu Ser Leu Ala Ser Pro Pro Cys Asn Gln Ala Pro Ile Leu Thr
                      615
                                          620
Cys Leu Pro Pro His Pro Arg Gly Thr Glu Glu Pro Gln Val Pro Leu
                                      635
                   630
His Leu Pro Ser Asp Pro Arg Ser Ser Phe Ala Phe Pro Pro Ser Leu
               645
                                  650
Ala Lys Ala Gly Arg Ser Arg Ser Glu Ser Ser Ala Asp Leu Pro Gln
                              665
Gln Gln Glu Leu Gln Pro Leu Met Gly His Lys Asp His Thr His Leu
                          680
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Ser Pro Gly Thr Ala Thr Ser His Trp Cys Ile Gln Phe Asn Arg Gly 690 695 700

Ser Arg Leu \*
705 707

<210> 1270 <211> 93 <212> PRT <213> Homo sapiens

<210> 1271 <211> 648 <212> PRT <213> Homo sapiens

<400> 1271 Met Leu Trp Val Thr Gly Pro Val Leu Ala Val Ile Leu Ile Ile Leu 10 Ile Val Ile Ala Ile Leu Leu Phe Lys Arg Lys Arg Thr His Ser Pro 20 25 Ser Ser Lys Asp Glu Gln Ser Ile Gly Leu Lys Asp Ser Leu Leu Ala 40 His Ser Ser Asp Pro Val Glu Met Arg Arg Leu Asn Tyr Gln Thr Pro Gly Met Arg Asp His Pro Pro Ile Pro Ile Thr Asp Leu Ala Asp Asn Ile Glu Arg Leu Lys Ala Asn Asp Gly Leu Lys Phe Ser Gln Glu Tyr 90 Glu Ser Ile Asp Pro Gly Gln Gln Phe Thr Trp Glu Asn Ser Asn Leu 105 100 Glu Val Asn Lys Pro Lys Asn Arg Tyr Ala Asn Val Ile Ala Tyr Asp 120 His Ser Arg Val Ile Leu Thr Ser Ile Asp Gly Val Pro Gly Ser Asp 135 140 Tyr Ile Asn Ala Asn Tyr Ile Asp Gly Tyr Arg Lys Gln Asn Ala Tyr 155 150 Ile Ala Thr Gln Gly Pro Leu Pro Glu Thr Met Gly Asp Phe Trp Arg 165 170 Met Val Trp Glu Gln Arg Thr Ala Thr Val Val Met Met Thr Arg Leu

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185
           180
Glu Glu Lys Ser Arg Val Lys Cys Asp Gln Tyr Trp Pro Ala Arg Gly
                          200
Thr Glu Thr Cys Gly Leu Ile Gln Val Thr Leu Leu Asp Thr Val Glu
                       215
Leu Ala Thr Tyr Thr Val Arg Thr Phe Ala Leu His Lys Ser Gly Ser
                  230
                                      235
Ser Glu Lys Arg Glu Leu Arg Gln Phe Gln Phe Met Ala Trp Pro Asp
                                 250
              245
His Gly Val Pro Glu Tyr Pro Thr Pro Ile Leu Ala Phe Leu Arg Arg
                           265
Val Lys Ala Cys Asn Pro Leu Asp Ala Gly Pro Met Val Val His Cys
                         280
Ser Ala Gly Val Gly Arg Thr Gly Cys Phe Ile Val Ile Asp Ala Met
                     295
Leu Glu Arg Met Lys His Glu Lys Thr Val Asp Ile Tyr Gly His Val
                 310 315
Thr Cys Met Arg Ser Gln Arg Asn Tyr Met Val Gln Thr Glu Asp Gln
                     330
               325
Tyr Val Phe Ile His Glu Ala Leu Leu Glu Ala Ala Thr Cys Gly His
                              345
Thr Glu Val Pro Ala Arg Asn Leu Tyr Ala His Ile Gln Lys Leu Gly
                          360
Gln Val Pro Pro Gly Glu Ser Val Thr Ala Met Glu Leu Glu Phe Lys
                      375
                                          380
Leu Leu Ala Ser Ser Lys Ala His Thr Ser Arg Phe Ile Ser Ala Asn
                   390
                                     395
Leu Pro Cys Asn Lys Phe Lys Asn Arg Leu Val Asn Ile Met Pro Tyr
                                410
              405
Glu Leu Thr Arg Val Cys Leu Gln Pro Ile Arg Gly Val Glu Gly Ser
          420
                              425
Asp Tyr Ile Asn Ala Ser Phe Leu Asp Gly Tyr Arg Gln Gln Lys Ala
                         440
                                             445
Tyr Ile Ala Thr Gln Gly Pro Leu Ala Glu Ser Thr Glu Asp Phe Trp
                      455
                                         460
Arg Met Leu Trp Glu His Asn Ser Thr Ile Ile Val Met Leu Thr Lys
                  470
                                      475
Leu Arg Glu Met Gly Arg Glu Lys Cys His Gln Tyr Trp Pro Ala Glu
                                 490
              485
Arg Ser Ala Arg Tyr Gln Tyr Phe Val Val Asp Pro Met Ala Glu Tyr
                             505
Asn Met Pro Gln Tyr Ile Leu Arg Glu Phe Lys Val Thr Asp Ala Arg
                         520
Asp Gly Gln Ser Arg Thr Ile Arg Gln Phe Gln Phe Thr Asp Trp Pro
                     535
Glu Gln Gly Val Pro Lys Thr Gly Glu Gly Phe Ile Asp Phe Ile Gly
                  550
                                      555
Gln Val His Lys Thr Lys Glu Gln Phe Gly Gln Asp Gly Pro Ile Thr
                                 570
Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Val Phe Ile Thr Leu
                              585
Ser Ile Val Leu Glu Arg Met Arg Tyr Glu Gly Val Val Asp Met Phe
Gln Thr Val Lys Thr Leu Arg Thr Gln Arg Pro Ala Met Val Gln Thr
                       615
Glu Asp Gln Tyr Gln Leu Cys Tyr Arg Ala Ala Leu Glu Tyr Leu Gly
                  630
                                      635
Ser Phe Asp His Tyr Ala Thr *
               645
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<210> 1272 <211> 109 <212> PRT <213> Homo sapiens

<210> 1273 <211> 56 <212> PRT <213> Homo sapiens

<210> 1274 <211> 188 <212> PRT <213> Homo sapiens

55 Lys Lys Glu Gly Ser Asp Arg Gln Trp Asn Tyr Ala Cys Met Pro Thr 70 75 Pro Gln Ser Leu Gly Glu Pro Thr Glu Cys Trp Trp Glu Glu Ile Asn 85 90 Arg Ala Gly Met Glu Trp Tyr Gln Thr Cys Ser Asn Asn Gly Leu Val 100 105 110 Ala Gly Phe Gln Ser Arg Tyr Phe Glu Ser Val Leu Asp Arg Glu Trp 120 125 Gln Phe Tyr Cys Cys Arg Tyr Ser Lys Arg Cys Pro Tyr Ser Cys Trp 135 140 Leu Thr Thr Glu Tyr Pro Gly His Tyr Gly Glu Glu Met Asp Met Ile 150 155 Ser Tyr Asn Tyr Asp Tyr Tyr Ile Arg Gly Ala Thr Thr His Phe Leu 165 170 Cys Ser Gly Lys Gly Ser Pro Ser Gly Ser Ser 185

<210> 1275 <211> 81 <212> PRT <213> Homo sapiens

<400> 1275

 Met
 Val
 Ala
 Leu
 Thr
 Ile
 Gln
 Thr
 Trp
 His
 Trp
 Leu
 Met
 Thr
 Val
 Ala

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 Ala
 Cys
 Tyr
 Ile
 Ala
 Ser
 Leu
 Val
 Phe
 Leu
 His

 Glu
 Phe
 Ile
 Asp
 Val
 Tyr
 Phe
 Ile
 Ala
 Thr
 Leu
 Ser
 Phe
 Leu
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 Glu
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 Ile
 Asp
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<210> 1276 <211> 46 <212> PRT <213> Homo sapiens

Leu Asn Arg Gln Ser Leu Lys Lys Lys Tyr Leu Ile Leu \* 35 40 45

<210> 1277

<211> 431 <212> PRT <213> Homo sapiens

<400> 1277 Met Ala Leu Leu Val Pro Leu Ala Leu Leu Val Ile Gln Ala His Leu 10 Val Leu Ser Val Gln Leu Glu Arg Val Val Thr Glu Glu Lys Val Ala 25 Leu Leu Ala Leu Leu Val Leu Pro Val Leu Leu Val Pro Glu Val Leu 40 . 45 Leu Val Leu Lys Ala His Val Val Thr Lys Val Lys Gln Val Asn Val 55 Glu Leu Leu Ala Ser Lys Asp Ile Glu Asp Ser Leu Val Ile Gln Val 70 Pro Gln Val Leu Gln Ala Leu Leu Val Ser Arg Val Gln Ser Ala Val 90 85 Gln Asp Leu Gln Ala Pro Glu Asp Leu Leu Asp Pro Val Asp Leu Leu 100 105 Ala Lys Met Glu Pro Val Asp Ile Gln Val Pro Leu Asp His Gln Gly 125 120 Leu Glu Val Thr Glu Val Lys Glu Asp Leu Arg Ala Pro Gln Ala Thr 135 Gln Gly Asn Gln Ala Leu Leu Asp Leu Leu Val Pro Leu Val Leu Ala 150 155 Val Val Leu Glu Pro Leu Pro Leu Leu Gly Leu Glu Val Lys Lys 170 165 Leu Ala Gly Phe Ala Pro Tyr Tyr Gly Asp Glu Pro Met Asp Phe Lys 190 185 Ile Asn Thr Asp Glu Ile Met Thr Ser Leu Lys Ser Val Asn Gly Gln 200 Ile Glu Ser Leu Ile Ser Pro Asp Gly Ser Arg Lys Asn Pro Ala Arg 215 220 Asn Cys Arg Asp Leu Lys Phe Cys His Pro Glu Leu Lys Ser Gly Glu 230 235 Tyr Trp Val Asp Pro Asn Gln Gly Cys Lys Leu Asp Ala Ile Lys Val 250 245 Phe Cys Asn Met Glu Thr Gly Glu Thr Cys Ile Ser Ala Asn Pro Leu 265 Asn Val Pro Arg Lys His Trp Trp Thr Asp Ser Ser Ala Glu Lys Lys 280 His Val Trp Phe Gly Glu Ser Met Asp Gly Gly Phe Gln Phe Ser Tyr 300 295 Gly Asn Pro Glu Leu Pro Glu Asp Val Leu Asp Val Gln Leu Ala Phe 315 310 Leu Arg Leu Leu Ser Ser Arg Ala Ser Gln Asn Ile Thr Tyr His Cys 325 330 Lys Asn Ser Ile Ala Tyr Met Asp Gln Ala Ser Gly Asn Val Lys Lys 345 Ala Leu Lys Leu Met Gly Ser Asn Glu Gly Glu Phe Lys Ala Glu Gly 360 Asn Ser Lys Phe Thr Tyr Thr Val Leu Glu Asp Gly Cys Thr Lys His 375 380 Thr Gly Glu Trp Ser Lys Thr Val Phe Glu Tyr Arg Thr Arg Lys Ala 395 390 Val Arg Leu Pro Ile Val Asp Ile Ala Pro Tyr Asp Ile Gly Gly Pro 405 410 Asp Gln Glu Phe Gly Val Asp Val Gly Pro Val Cys Phe Leu \*

420 425 430

<210> 1278 <211> 53 <212> PRT

<213> Homo sapiens

<210> 1279 <211> 73 <212> PRT <213> Homo sapiens

<210> 1280 <211> 51 <212> PRT <213> Homo sapiens

<210> 1281 <211> 144 <212> PRT <213> Homo sapiens

<400> 1281 Met Lys Ser Gly Ser Gly Gly Ser Pro Thr Ser Leu Trp Gly Leu 10 Leu Phe Leu Ser Ala Ala Leu Ser Leu Trp Pro Thr Ser Gly Glu Ile 25 Cys Gly Pro Gly Ile Asp Ile Arg Asn Asp Tyr Gln Gln Leu Lys Arg 40 Leu Glu Asn Cys Thr Val Ile Glu Gly Tyr Leu His Ile Leu Leu Ile 55 60 Ser Lys Ala Glu Asp Tyr Arg Ser Tyr Arg Phe Pro Lys Leu Thr Val 70 75 Ile Thr Glu Tyr Leu Leu Phe Arg Val Ala Gly Leu Glu Ser Leu 90 Gly Asp Leu Phe Pro Asn Leu Thr Val Ile Arg Gly Trp Lys Leu Phe 100 105 Tyr Asn Tyr Ala Leu Val Ile Phe Glu Met Thr Asn Leu Lys Asp Ile 115 120 Gly Leu Tyr Asn Leu Arg Asn Ile Thr Arg Gly Gly His Gln Asp \* 135 140

<210> 1282 <211> 267 <212> PRT <213> Homo sapiens

<400> 1282 Met Gly Pro Pro Ser Ala Cys Pro His Arg Glu Cys Ile Pro Trp Gln 1 5 10 Gly Leu Leu Thr Ala Ser Leu Leu Thr Phe Trp Asn Ala Pro Thr 2.0 25 Thr Ala Trp Leu Phe Ile Ala Ser Ala Pro Phe Glu Val Ala Glu Gly 40 Glu Asn Val His Leu Ser Val Val Tyr Leu Pro Glu Asn Leu Tyr Ser 50 . 55 Tyr Gly Trp Tyr Lys Gly Lys Thr Val Glu Pro Asn Gln Leu Ile Ala 70 75 Ala Tyr Val Ile Asp Asp Thr His Val Arg Thr Pro Gly Pro Ala Tyr . 90 85 Ser Gly Arg Glu Thr Ile Ser Pro Ser Gly Asp Leu His Phe Gln Asn 105 100 Val Thr Leu Glu Asp Thr Gly Tyr Tyr Asn Leu Gln Val Thr Tyr Arg 120 125 Asn Ser Gln Ile Glu Gln Ala Ser His His Leu Arg Val Tyr Gln Val 135 140 Ser Gly Leu Thr Pro Pro Ser Lys Pro Ala Ala Pro Gln Ser Pro Arg 150 155 Arg Ala Pro Gly Val Leu Thr Cys His Thr Asn Asn Thr Gly Thr Ser 165 170 Phe Gln Trp Ile Phe Asn Asn Gln Arg Leu Gln Val Thr Lys Arg Met

180 185 Lys Leu Ser Trp Phe Asn His Met Leu Thr Ile Asp Pro Ile Arg Gln 200 Glu Asp Ala Gly Glu Tyr Gln Cys Glu Val Ser Asn Pro Val Ser Ser 215 220 Asn Arg Ser Asp Pro Leu Lys Leu Thr Val Lys Ser Asp Asp Asn Thr 230 235 Leu Gly Ile Leu Ile Gly Val Leu Val Gly Ser Leu Leu Val Ala Ala 250 245 Leu Val Cys Phe Leu Leu Leu Arg Lys Thr Gly 260 265 267

<210> 1283 <211> 262 <212> PRT <213> Homo sapiens

<400> 1283

Met Leu Val Leu Val Leu Arg Val Ser Leu Ala Ala Leu Val Lys 10 Met Glu Leu Leu Val Arg Trp Ala Pro Val Ala Cys Leu Val Arg Glu 20 25 Val Ala Leu Glu Pro Leu Ala Leu Leu Val Leu Val Glu Met Met Val 40 Leu Leu Val Leu Pro Gly Pro Leu Val Pro Pro Ala Pro Leu Val Leu 55 60 Leu Ala Ser Leu Val Leu Leu Val Leu Arg Val Lys Leu Val Pro Lys 70 75 Gly Pro Glu Ala Leu Lys Val Pro Arg Val Cys Val Val Ser Leu Ala 85 90 Pro Leu Ala Leu Leu Val Leu Leu Ala Leu Leu Glu Thr Leu Val Leu 100 105 Arg Glu Ser Leu Val Leu Lys Val Pro Met Val Leu Leu Val Leu Leu 120 125 Val Leu Leu Ala Ser Leu Val Pro Glu Ala Pro Leu Asp Pro Arg Ala 135 Pro Ala Ala Leu Leu Val Pro Arg Val Thr Ala Val Asn Leu Val Leu 150 155 Leu Ala Ala Lys Glu Thr Leu Val Leu Arg Glu Ser Leu Ala Leu Leu 1.65 170 175 Val Phe Lys Asp Pro Leu Ala Leu Leu Glu Arg Lys Glu Ser Glu Glu 185 Leu Glu Val Asn Pro Asp Pro Leu Ala Cys Pro Asp Pro Leu Ala Ser 195 200 Val Val Asp Leu Val Ala Val Val Ser Leu Ala Gln Met Val Leu Leu 210 215 220 Val Pro Arg Val Pro Leu Val Asn Val Val Leu Leu Ala Leu Leu Ala 225 230 235 Pro Lys Asp Leu Leu Val Lys Leu Val Val Pro Val Lys Leu Val Cys 245 250 Leu Val Pro Arg Val \* 260 261

<210> 1284

<211> 50 <212> PRT <213> Homo sapiens

<210> 1285 <211> 323 <212> PRT <213> Homo sapiens

<400> 1285 Met Leu Val Met Ala Pro Arg Thr Val Leu Leu Leu Ser Ala Ala 10 Leu Ala Leu Thr Glu Thr Trp Ala Gly Ser His Ser Met Arg Tyr Phe 20 Tyr Thr Ser Val Ser Arg Pro Gly Arg Gly Glu Pro Arg Phe Ile Ser Val Gly Tyr Val Asp Asp Thr Gln Phe Val Arg Phe Asp Ser Asp Ala 55 Ala Ser Pro Arg Glu Glu Pro Arg Ala Pro Trp Ile Glu Gln Glu Gly 75 70 Pro Glu Tyr Trp Asp Arg Asn Thr Gln Ile Tyr Lys Ala Gln Ala Gln 85 Thr Asp Arq Glu Ser Leu Arq Asn Leu Arg Gly Tyr Tyr Asn Gln Ser 105 Glu Ala Gly Ser His Thr Leu Gln Ser Met Tyr Gly Cys Asp Val Gly 120 Pro Asp Gly Arg Leu Leu Arg Gly His Asp Gln Tyr Ala Tyr Asp Gly 135 140 Lys Asp Tyr Ile Ala Leu Asn Glu Asp Leu Arg Ser Trp Thr Ala Ala 150 Asp Thr Ala Ala Gln Ile Thr Gln Arg Lys Trp Glu Ala Ala Arg Glu 170 Ala Glu Gln Arg Arg Ala Tyr Leu Glu Gly Glu Cys Val Glu Trp Leu 185 Arg Arg Tyr Leu Glu Asn Gly Lys Asp Lys Leu Glu Arg Ala Asp Pro 200 Pro Lys Thr His Val Thr His His Pro Ile Ser Asp His Glu Ala Thr 220 215 Leu Arg Cys Trp Ala Leu Gly Phe Tyr Pro Ala Glu Ile Thr Leu Thr 230 235 Trp Gln Arg Asp Gly Glu Asp Gln Thr Gln Asp Thr Glu Leu Val Glu 245 250 Thr Arg Pro Ala Gly Asp Arg Thr Phe Gln Lys Val Gly Gln Leu Trp 265 Val Val Pro Ser Gly Glu Glu Gln Arg Tyr Thr Cys His Val Gln His

<210> 1286 <211> 306 <212> PRT <213> Homo sapiens

<400> 1286

Met Leu Leu Phe Leu Leu Ser Ala Leu Val Leu Leu Thr Gln Pro Leu 10 Gly Tyr Leu Glu Ala Glu Met Lys Thr Tyr Ser His Arg Thr Met Pro 20 25 Ser Ala Cys Thr Leu Val Met Cys Ser Ser Val Glu Ser Gly Leu Pro 40 Gly Arg Asp Gly Arg Asp Gly Arg Glu Gly Pro Arg Gly Glu Lys Gly 55 60 Asp Pro Gly Leu Pro Gly Ala Ala Gly Gln Ala Gly Met Pro Gly Gln 70 75 Ala Gly Pro Val Gly Pro Lys Gly Asp Asn Gly Ser Val Gly Glu Pro 90 Gly Pro Lys Gly Asp Thr Gly Pro Ser Gly Pro Pro Gly Pro Pro Gly 100 105 Val Pro Gly Pro Ala Gly Arg Glu Gly Pro Leu Gly Lys Gln Gly Asn 120 125 Ile Gly Pro Gln Gly Lys Pro Gly Pro Lys Gly Glu Ala Gly Pro Lys 135 140 Gly Glu Val Gly Ala Pro Gly Met Gln Gly Ser Ala Gly Ala Arg Gly 150 155 Leu Ala Gly Pro Lys Gly Glu Arg Gly Val Pro Gly Glu Arg Gly Val 170 165 175 Pro Gly Asn Thr Gly Ala Ala Gly Ser Ala Gly Ala Met Gly Pro Gln 180 185 Gly Ser Pro Gly Ala Arg Gly Pro Pro Gly Leu Lys Gly Asp Lys Gly 200 205 Ile Pro Gly Asp Lys Gly Ala Lys Gly Glu Ser Gly Leu Pro Asp Val 215 220 Ala Ser Leu Arg Gln Gln Val Glu Ala Leu Gln Gly Gln Val Gln His 230 235 Leu Gln Ala Ala Phe Ser Gln Tyr Lys Lys Val Glu Leu Phe Pro Asn 245 250 Gly Gln Ser Val Gly Glu Lys Ile Phe Lys Thr Ala Gly Phe Val Lys 265 Pro Phe Thr Glu Ala Gln Leu Leu Cys Thr Gln Ala Gly Gly Gln Leu 280 285 Ala Ser Pro Arg Ser Ala Ala Glu Asn Ala Pro Leu Ala Thr Ala Gly 295 Pro \* 305

<210> 1287 <211> 299 <212> PRT <213> Homo sapiens

<400> 1287 Met Gly Arg Trp Ala Leu Asp Val Ala Phe Leu Trp Lys Ala Val Leu 10 . Thr Leu Gly Leu Val Leu Leu Tyr Tyr Cys Phe Ser Ile Gly Ile Thr 25 Phe Tyr Asn Lys Trp Leu Thr Lys Ser Phe His Phe Pro Leu Phe Met 40 Thr Met Leu His Leu Ala Val Ile Phe Leu Phe Ser Ala Leu Ser Arg 55 Ala Leu Val Gln Cys Ser Ser His Arg Ala Arg Val Val Leu Ser Trp 70 75 · Ala Asp Tyr Leu Arg Arg Val Ala Pro Thr Ala Leu Ala Thr Ala Leu 85 90 Asp Val Gly Leu Ser Asn Trp Ser Phe Leu Tyr Val Thr Val Ser Leu 100 105 Tyr Thr Met Thr Lys Ser Ser Ala Val Leu Phe Ile Leu Ile Phe Ser 115 120 125 Leu Ile Phe Lys Leu Glu Glu Leu Arg Ala Ala Leu Val Leu Val Val 135 140 Leu Leu Ile Ala Gly Gly Leu Phe Met Phe Thr Tyr Lys Ser Thr Gln 1.50 155 Phe Asn Val Glu Gly Phe Ala Leu Val Leu Gly Ala Ser Phe Ile Gly 165 170 Gly Ile Arg Trp Thr Leu Thr Gln Met Leu Leu Gln Lys Ala Glu Leu 180 185 Gly Leu Gln Asn Pro Ile Asp Thr Met Phe His Leu Gln Pro Leu Met 195 200 Phe Leu Gly Leu Phe Pro Leu Phe Ala Val Phe Glu Gly Leu His Leu 215 . 220 Ser Thr Ser Glu Lys Ile Phe Arg Phe Gln Gly His Arg Ala Ala Pro 230 235 Ala Gly Thr Trp Gly Ala Ser Ser Leu Ala Gly Phe Ser Pro Leu Val 245 250 Trp Ala Ser Leu Ser Ser Ser Trp Ser Pro Glu Pro Pro Ala Ser Leu 265 Ser Pro Leu Pro Ala Phe Leu Arg Lys Ser Ala Leu Cys Cys Trp Gln 280 285 Leu Ile Cys Trp Ala Ile Arg Ser Ala Ser \* 29Ó 295

<210> 1288 <211> 161 <212> PRT <213> Homo sapiens

Ala Leu Arg Val Trp Gly Val Gly Asn Glu Ala Gly Val Gly Pro Gly 40 Leu Gly Glu Trp Ala Val Val Thr Gly Ser Thr Asp Gly Ile Gly Lys 55 Ser Tyr Ala Glu Glu Leu Ala Lys His Gly Met Lys Val Val Leu Ile 70 75 Ser Arg Ser Lys Asp Lys Leu Asp Gln Val Ser Ser Glu Ile Lys Glu 85 90 Lys Phe Lys Val Glu Thr Arg Thr Ile Ala Val Asp Phe Ala Ser Glu 100 105 110 Asp Ile Tyr Asp Lys Ile Lys Thr Gly Leu Ala Gly Leu Glu Ile Gly 115 120 125 Ile Leu Val Asn Asn Val Gly Met Ser Tyr Glu Tyr Pro Glu Tyr Phe 135 140 Leu Asp Val Pro Asp Leu Asp Asn Val Ile Lys Lys Asn Asp Lys Tyr 150 155

<210> 1289

<211> 46

<212> PRT

<213> Homo sapiens

<400> 1289

<210> 1290

<211> 453

<212> PRT

<213> Homo sapiens

<400> 1290

 Met
 Thr
 Ser
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Asp Ser Lys Phe Trp Glu Glu Ala Thr Pro Ile Trp Ile Thr Asn Gln
            . 120
Arg Ala Gly His Thr Ser Gly Ala Ala Met Trp Pro Gly Thr Asp Val
                      135
                                         140
Lys Ile His Lys Arg Phe Pro Thr His Tyr Met Pro Tyr Asn Glu Ser
                                     155
Val Ser Phe Glu Asp Arg Val Ala Lys Ile Ile Glu Trp Phe Thr Ser
              165
                                 170
Lys Glu Pro Ile Asn Leu Gly Leu Leu Tyr Trp Glu Asp Pro Asp Asp
           180
                            185
Met Gly His His Leu Gly Pro Asp Ser Pro Leu Met Gly Pro Val Ile
       195
                         200
Ser Asp Ile Asp Lys Lys Leu Gly Tyr Leu Ile Gln Met Leu Lys Lys
                     215
                                         220
Ala Lys Leu Trp Asn Thr Leu Asn Leu Ile Ile Thr Ser Asp His Gly
                  230
                                    235
Met Thr Gln Cys Ser Glu Glu Arg Leu Ile Glu Leu Asp Gln Tyr Leu
               245
                                 250
Asp Lys Asp His Tyr Thr Leu Ile Asp Gln Ser Pro Val Ala Ala Ile
          260
                             265
Leu Pro Lys Glu Gly Lys Phe Asp Glu Val Tyr Glu Ala Leu Thr His
                  280
Ala His Pro Asn Leu Thr Val Tyr Lys Lys Glu Asp Val Pro Glu Arg
                     295
                                        300
Trp His Tyr Lys Tyr Asn Ser Arg Ile Gln Pro Ile Ile Ala Val Ala
                 310
                                   315
Asp Glu Gly Trp His Ile Leu Gln Asn Lys Ser Asp Asp Phe Leu Leu
              325
                                330
Gly Asn His Gly Tyr His Asn Ala Leu Ala Asp Met His Pro Ile Phe
           340 345 350
Leu Ala His Gly Pro Ala Phe Arg Lys Asn Phe Ser Lys Glu Ala Met
                               365
                         360
Asn Ser Thr Asp Leu Tyr Pro Leu Leu Cys His Leu Leu Asn Ile Thr
                      375
                                         380
Ala Met Pro His Asn Gly Ser Phe Trp Asn Val Gln Asp Leu Leu Asn
                  390
                                     395
Ser Ala Met Pro Arg Val Val Pro Tyr Thr Gln Ser Thr Ile Leu Leu
                                 410
Pro Gly Ser Val Lys Pro Ala Glu Tyr Asp Gln Glu Gly Ser Tyr Pro
                            425
Tyr Phe Ile Gly Val Ser Leu Gly Ser Ile Ile Val Ile Val Phe Phe
      435
                         440
Cys Asn Phe His *
   450
        452
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<210> 1291

<211> 78

<212> PRT

<213> Homo sapiens

<221> misc_feature

<222> (1)...(78)

<223> Xaa = any amino acid or nothing
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 $<\!\!400\!\!> 1291$  Met Leu Ser Val Thr Ala Phe Ile Leu Ala Glu Thr Val Leu Ala Ser

<210> 1292 <211> 416 <212> PRT <213> Homo sapiens

<400> 1292

Met Val Leu Trp Ile Leu Trp Arg Pro Phe Gly Phe Ser Gly Arg Phe 10 Leu Lys Leu Glu Ser His Ser Ile Thr Glu Ser Lys Ser Leu Ile Pro 20 25 Val Ala Trp Thr Ser Leu Thr Gln Met Leu Leu Glu Ala Pro Gly Ile 40 Phe Leu Leu Gly Gln Arg Lys Arg Phe Ser Thr Met Pro Glu Thr Glu 55 60 Thr His Glu Arg Glu Thr Glu Leu Phe Ser Pro Pro Ser Asp Val Arg 70 75 Gly Met Thr Lys Leu Asp Arg Thr Ala Phe Lys Lys Thr Val Asn Ile 90 Pro Val Leu Lys Val Arg Lys Glu Ile Val Ser Lys Leu Met Arg Ser 100 105 Leu Lys Arg Ala Ala Leu Gln Arg Pro Gly Ile Arg Arg Val Ile Glu 115 120 125 Asp Pro Glu Asp Lys Glu Ser Arg Leu Ile Met Leu Asp Pro Tyr Lys 135 140 Ile Phe Thr His Asp Ser Phe Glu Lys Ala Glu Leu Ser Val Leu Glu 150 155 Gln Leu Asn Val Ser Pro Gln Ile Ser Lys Tyr Asn Leu Glu Leu Thr 165 170 Tyr Glu His Phe Lys Ser Glu Glu Ile Leu Arg Ala Val Leu Pro Glu 180 185 Gly Gln Asp Val Thr Ser Gly Phe Ser Arg Ile Gly His Ile Ala His 195 200 205 Leu Asn Leu Arg Asp His Gln Leu Pro Phe Lys His Leu Ile Gly Gln 215 220 Val Met Ile Asp Lys Asn Pro Gly Ile Thr Ser Ala Val Asn Lys Ile 230 235 Asn Asn Ile Asp Asn Met Tyr Arg Asn Phe Gln Met Glu Val Leu Ser 245 250 Gly Glu Gln Asn Met Met Thr Lys Val Arg Glu Asn Asn Tyr Thr Tyr 265 270 Glu Phe Asp Phe Ser Lys Val Tyr Trp Asn Pro Arg Leu Ser Thr Glu 280 285 His Ser Arg Ile Thr Glu Leu Leu Lys Pro Gly Asp Val Leu Phe Asp 295 Val Phe Ala Gly Val Gly Pro Phe Ala Ile Pro Val Ala Lys Lys Asn 310 315

Cys Thr Val Phe Ala Asn Asp Leu Asn Pro Glu Ser His Lys Trp Leu 330 Leu Tyr Asn Cys Lys Leu Asn Lys Val Asp Gln Lys Val Lys Val Phe 340 345 Asn Leu Asp Gly Lys Asp Phe Leu Gln Gly Pro Val Lys Glu Glu Leu 365 360 Met Gln Leu Leu Gly Leu Ser Lys Glu Arg Lys Pro Ser Val His Val 375 380 Val Met Asn Leu Pro Ala Lys Ala Ile Glu Phe Leu Ser Ala Phe Lys 395 385 390 Trp Leu Leu Asp Gly Gln Pro Met Pro Ala Val Ser Ser Phe Pro \* 410

<210> 1293 <211> 113 <212> PRT <213> Homo sapiens

<400> 1293 Met Val Arg Pro Leu Leu Leu Leu Asn Leu His Phe His Leu Pro Ser Leu Val Ser Leu Ser Leu Ser Leu Leu Ser Val Ser Leu Ser Leu 20 25 Val Asn Ala Val Arg Leu Leu Arg Ala Ser Phe Cys Ser Trp Leu Ile 40 Ala Lys Ser Leu Ile Thr Leu Trp Val Arg Pro Ser Gln Ile Gly Lys 55 Leu Lys Ala Leu Ala Ser Ser Thr Thr Ser Met Ala Trp Glu Gly Leu 70 75 Leu Asp Thr Phe Ala Leu Ser Ile Ser Ser Phe Ser Asn Ser Leu Leu 85 90 95 Gly Ile Leu Leu Cys Phe Leu Lys Ser Pro Asn Ile Phe Gln Ala Ser 105

<210> 1294 <211> 57 <212> PRT <213> Homo sapiens

<210> 1295 <211> 68 <212> PRT <213> Homo sapiens <400> 1295 Met Phe Leu Ser Leu Cys Leu Leu Ser Ala Ala Leu Thr Lys Ile Ser 5 10 Ser Lys Ile Leu Tyr Lys Pro Gly Thr Lys Val Thr Ser Leu Gln Phe 20 25 Ile Pro Thr Ser Ser Ser Tyr Thr His Met Asn Cys Val Asn Gly Ser 35 40 45 Thr Asp Pro Ile Tyr Val Ser Gly Arg Arg Arg Met Cys Ser Ser Cys 50 ·• 55 Val Phe Ile 65 67 <210> 1296 <211> 66 <212> PRT <213> Homo sapiens <400> 1296 Met Trp Ser Ala His Pro Leu Ala Val Leu Ser Leu Lys Leu Thr Leu 5 1.0 Phe Ser Leu Thr Ser Asp Trp Leu Ser Ser Lys Asp Met Ala Ile Ser 20 25 30 Leu Ala Phe Lys Ile Ser Gln Ile Leu Cys Ser Val Leu Ser Ala Pro 40 Gly Lys Arg Leu Ile Ser Val Leu Trp Asn Thr Ser Ser Leu Lys Arg 50

<210> 1297 <211> 57

Ser \*

<212> PRT

<213> Homo sapiens

<400> 1297

<210> 1298

<211> 235 <212> PRT <213> Homo sapiens

<400> 1298 Met Arg Lys Thr Arg Leu Trp Gly Leu Leu Trp Met Leu Phe Val Ser 10 Glu Leu Arg Ala Ala Thr Lys Leu Thr Glu Glu Lys Tyr Glu Leu Lys 20 25 Glu Gly Gln Thr Leu Asp Val Lys Cys Asp Tyr Thr Leu Glu Lys Phe 40 Ala Ser Ser Gln Lys Ala Trp Gln Ile Ile Arg Asp Gly Glu Met Pro 60 55 Lys Thr Leu Ala Cys Thr Glu Arg Pro Ser Lys Asn Ser His Pro Val 70 75 Gln Val Gly Arg Ile Ile Leu Glu Asp Tyr His Asp His Gly Leu Leu 90 85 Arg Val Arg Met Val Asn Leu Gln Val Glu Asp Ser Gly Leu Tyr Gln 105 Cys Val Ile Tyr Gln Pro Pro Lys Glu Pro His Met Leu Phe Asp Arg 120 125 Ile Arg Leu Val Val Thr Lys Gly Phe Ser Gly Thr Pro Gly Ser Asn 135 140 Glu Asn Ser Thr Gln Asn Val Tyr Lys Ile Pro Pro Thr Thr Thr Lys 150 155 Ala Leu Cys Pro Leu Tyr Thr Thr Pro Arg Thr Val Thr Gln Ala Pro 170 165 Pro Lys Ser Thr Ala Asp Val Ser Thr Pro Asp Ser Glu Ile Asn Leu 185 190 Thr Asn Val Thr Asp Ile Ile Arg Val Pro Val Phe Asn Ile Val Ile 200 195 Leu Leu Ala Gly Gly Phe Leu Ser Lys Ser Leu Val Phe Ser Val Leu 215 220 Phe Ala Val Thr Leu Arg Ser Phe Val Pro \* 230

<210> 1299

<211> 64

<212> PRT

<213> Homo sapiens

<210> 1300 <211> 80

<212> PRT <213> Homo sapiens

<400> 1300

 Met Ala Ser Arg
 Ser Asn Tyr
 Leu Thr Glu Thr Leu Thr Leu Thr Pro Phe Pro 15

 Ala Leu Leu Ser Leu Phe Met Leu Tyr
 Leu Ser His Thr Gly Phe Asp 20

 Asn Ile Ile Pro Thr Phe Pro Thr Lys Pro Ala Tyr Thr Leu His Arg 35

 Leu Leu Pro His Cys Pro Asp Ile His Ile Ala Tyr Ser Leu Ile Ser 50

 Ser His Leu Phe Ala Gln Gly Ala Ser Leu Ser Thr Arg Thr His \*

<210> 1301

<211> 87

<212> PRT

<213> Homo sapiens

<400> 1301

 Met
 Arg
 Phe
 Arg
 Ala
 Glu
 Pro
 Lys
 Ser
 Arg
 Pro
 Leu
 Pro
 Ala
 Leu
 Cys

 His
 Val
 Leu
 Ile
 Ala
 Cys
 Ile
 Val
 Pro
 Arg
 Try
 Arg
 Pro
 Arg
 Try
 Arg
 Ser
 Ser
 Gly
 Glu
 Pro
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<210> 1302

<211> 143

<212> PRT

<213> Homo sapiens

<400> 1302

<210> 1303 <211> 60 <212> PRT <213> Homo sapiens

<210> 1304 <211> 56 <212> PRT <213> Homo sapiens

<210> 1305 <211> 63 <212> PRT <213> Homo sapiens

50 55 60 62

<210> 1306 <211> 138 <212> PRT <213> Homo sapiens

<400> 1306 Met Gln Asn Arg Thr Gly Leu Ile Leu Cys Ala Leu Ala Leu Leu Met 10 Gly Phe Leu Met Val Cys Leu Gly Ala Phe Phe Ile Ser Trp Gly Ser Ile Phe Asp Cys Gln Gly Ser Leu Ile Ala Ala Tyr Leu Leu Leu Pro Leu Gly Phe Val Ile Leu Leu Ser Gly Ile Phe Trp Ser Asn Tyr Arg 55 Gln Val Thr Glu Ser Lys Gly Val Leu Arg His Met Leu Arg Gln His 70 75 Leu Ala His Gly Ala Leu Pro Val Ala Thr Val Asp Arg Pro Asp Phe 90 Tyr Pro Pro Ala Tyr Glu Glu Ser Leu Glu Val Glu Lys Gln Ser Cys 100 105 110 Pro Ala Glu Arg Glu Ala Pro Arg His Ser Ser Thr Ser Ile Tyr Arg 120 Asp Gly Pro Gly Ile Pro Gly Trp Lys \* 135 137

<210> 1307 <211> 64 <212> PRT <213> Homo sapiens

<210> 1308 <211> 65 <212> PRT <213> Homo sapiens

<400> 1308

<210> 1309 <211> 75 <212> PRT <213> Homo sapiens

<210> 1310 <211> 46 <212> PRT <213> Homo sapiens

<210> 1311 <211> 105 <212> PRT <213> Homo sapiens

 $<\!\!400\!\!> 1311$  Met Tyr Trp Val Thr Val Ile Thr Leu Ile Tyr Gly Tyr Tyr Ala Trp 1 5 10 15 Val Gly Phe Trp Pro Glu Ser Ile Pro Tyr Gln Asn Leu Gly Pro Leu

<210> 1312 <211> 114 <212> PRT <213> Homo sapiens

<400> 1312 Met Lys Gly Lys Trp Cys Cys Ser Leu Leu Cys Gln Ser Pro Gln Val 10 Gln Thr Ala Leu Val Cys Pro Leu Ser Leu Ser Leu Gly Pro Pro Gly 25 Pro Gln Cys Pro Leu Leu Trp Leu Gly Gln Glu Asp Leu Pro Asp Ile 35 40 Ala Arg Cys Ile Thr Asp Asp Cys Ser Gln Leu Pro Gln Ala Pro Ala 55 60 Ser Leu Ala Ser Cys Phe Phe Pro Gln Ser Cys Leu Leu Ile Ser Ile 70 75 His Leu Ser Met Gly Tyr Ser Trp Thr Leu Gly Leu Gly Val Gly Ile 90 Arg Leu Leu Pro Thr Lys Gly Val Lys Val Thr His Phe Pro Tyr His 105 Ala \* 113

<210> 1313 <211> 88 <212> PRT <213> Homo sapiens

<210> 1314 <211> 65 <212> PRT <213> Homo sapiens

<400> 1314

<210> 1315 <211> 71 <212> PRT <213> Homo sapiens

<400> 1315

 Met
 Leu
 Ile
 Pro
 Ile
 Pro
 Val
 His
 Ile
 Phe
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 Leu
 Ser
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<210> 1317 <211> 91 <212> PRT <213> Homo sapiens

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<210> 1321 <211> 55 <212> PRT <213> Homo sapiens

<210> 1322 <211> 301 <212> PRT <213> Homo sapiens

75 Phe Ser Thr Arg Ser Asn Tyr Asp Gly Ile Leu Pro Gln Thr Phe Ala 90 Gln Val Asn Asn Leu Leu Gln Thr Phe Ala Glu Val Lys Thr Lys Leu 105 Lys Pro Asn Ser Ser Glu Asn Thr Val Thr Lys Lys Gln Glu Gly Thr 120 125 Ser Leu Lys Asn Ser His Asn Gln Glu Ile Thr Val Phe Ser Ser Ser 135 140 His Leu Pro Gln Pro Ser Arg His Gln Glu Ile Trp Ser Ile Leu Glu 150 155 Ser Val Trp Ile Thr Ile Tyr Gln Asn Ser Thr Asp Val Phe Gln Arq 165 170 Leu Gly Ser Asn Ser Ala Leu Thr Thr Ser Asn Ile Ala Ser Phe Glu 180 185 Glu Ala Phe Ile Cys Leu Gln Lys Leu Met Ala Ala Val Arg Asp Ile 195 200 205 Leu Glu Gly Ile Gln Arg Ile Leu Ala Pro Asn Ser Asn Tyr Gln Asp 215 220 Val Glu Thr Leu Tyr Asn Phe Leu Ile Lys Tyr Glu Val Asn Lys Asn 230 235 Val Lys Phe Thr Ala Gln Glu Ile Tyr Asp Cys Val Ser Gln Thr Glu 245 250 Tyr Arg Glu Lys Leu Thr Ile Gly Cys Arg Gln Leu Val Glu Met Glu 260 265 Tyr Thr Met Gln Gln Cys Asn Ala Ser Val Tyr Met Glu Ala Lys Asn 275 . 280 Arg Gly Trp Cys Glu Asp Met Leu Asn Tyr Arg Ile \* 295

<210> 1323 <211> 85 <212> PRT <213> Homo sapiens

tally memo buplons

<210> 1324 <211> 46 <212> PRT <213> Homo sapiens

<210> 1325 <211> 87 <212> PRT <213> Homo sapiens

<210> 1326 <211> 69 <212> PRT <213> Homo sapiens

<210> 1327 <211> 103 <212> PRT <213> Homo sapiens <221> misc feature <222> (1)...(103) <223> Xaa = any amino acid or nothing

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Pro Leu Gly 5

<210> 1329 <211> 204 <212> PRT <213> Homo sapiens

Glu Leu Thr Asn Gln Val Leu Glu Met Arg Gly Thr Ala Ala Gly Met 100 105 Asp Leu Trp Val Thr Phe Glu Ile Arg Glu His Gly Glu Leu Glu Arg 120 125 115 Pro Leu His Pro Lys Glu Lys Val Leu Glu Gln Ala Leu Gln Trp Cys 135 140 Gln Leu Pro Glu Pro Cys Ser Ala Ser Leu Leu Leu Lys Lys Val Pro 150 155 Leu Ala Gln Ala Gly Cys Leu Phe Thr Gly Ile Arg Arg Glu Ser Pro 170 165 Arg Val Gly Leu Phe Ala Val Phe Val Arg Ser His Leu Ala Cys Trp 185 Gly Ser Arg Phe Gln Glu Arg Phe Phe Leu Val Ala 200 195

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<210> 1331 <211> 81 <212> PRT <213> Homo sapiens

<400> 1331 Met Ala Arg Pro Ser Ala Phe Pro Ile Gly Val Cys Leu Thr Leu Pro 10 5 Met Ala Trp Ile Ser Pro Gly Leu Ala Val Pro Ser Cys Pro Gln Tyr 20 25 Ile Leu Gln Ala Gln Gly Cys Ile Leu Asp Met Lys Thr Arg Gly Ser 35 40 His Gly Glu Ser Ala Val Pro Gly Ala His Gly Ser Arg Pro Phe His 55 Pro Leu Ala Glu Pro Asn Pro Pro Arg Gln Lys Leu Thr Pro Cys Thr 65 70 75

<210> 1332

<211> 73

<212> PRT

<213> Homo sapiens

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<223> Xaa = any amino acid or nothing

<400> 1332

<210> 1333

<211> 52

<212> PRT

<213> Homo sapiens

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 Tyr
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 Met
 Tyr
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 Asn
 Val
 Cys
 Ile
 Val

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 Pro
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 Lys
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 Asp
 Leu
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PCT/US01/02687 WO 01/54477

<211> 65 <212> PRT <213> Homo sapiens

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<210> 1335 <211> 112 <212> PRT <213> Homo sapiens

<400> 1335

Met Leu His Pro Glu Thr Ser Pro Gly Arg Gly His Leu Leu Ala Val 10 Leu Leu Ala Leu Leu Gly Thr Ala Trp Ala Glu Val Trp Pro Pro Gln 20 25 Leu Gln Glu Gln Ala Pro Met Ala Gly Ala Leu Asn Arg Lys Glu Ser 40 Phe Leu Leu Ser Leu His Asn Arg Leu Arg Ser Trp Val Gln Pro Pro Ala Ala Asp Met Arg Arg Leu Asp Trp Ser Asp Ser Leu Ala Gln 75 70 Leu Ala Gln Ala Arg Ala Ala Leu Cys Gly Ile Pro Thr Pro Ser Leu 85 90 Ala Ser Gly Leu Trp Arg Thr Leu Gln Val Gly Trp Asn Met Gln Leu

<210> 1336 <211> 105 <212> PRT <213> Homo sapiens

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<210> 1337 <211> 57 <212> PRT <213> Homo sapiens

<210> 1338 <211> 59 <212> PRT <213> Homo sapiens

<210> 1339 <211> 50 <212> PRT <213> Homo sapiens

Tyr \* 49

<210> 1340

<211> 81

<212> PRT

<213> Homo sapiens

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Arg Asp Leu Phe Leu Pro Trp Gly Leu Cys Ile Leu Tyr Ser Ile Leu 20 25 30

Ser Ala Ile Phe Pro Asp Leu Ser Ser Ser Ala Lys Leu Pro Ser Leu 35 40 45

His Ile Ala Phe Phe Thr Leu Phe Lys Val Thr Lys Gly Thr Ser Pro 50 55 60

Lys Ala Thr Asp Val Pro Val Ala Cys Phe Ile Asn His Asn Arg Thr 65 70 75 80

<210> 1341

<211> 60

<212> PRT

<213> Homo sapiens

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 Met Phe Glu Ile His Arg Ala His Gly Val Phe Leu Leu Leu Ser Ile

 1
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 Gln Leu Thr Thr Ser Leu Lys Arg Lys Ser Gly Glu Gly Asp Arg Glu
 20
 25
 25
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 Ser Pro Ala Ser Trp Phe Ser Pro Phe Ser Gln Met Phe Phe Leu Ile
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Asn Thr Ile Leu Leu Pro Phe Lys Ile Pro Ile 50 55 59

<210> 1342

<211> 49

<212> PRT

<213> Homo sapiens

<400> 1342

Met Leu Ser Leu Phe Ile Phe Leu Arg Phe Leu Pro Leu Gly Phe Cys

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Trp Lys Glu Leu His Pro Glu Ala Glu Gln Ser Glu Lys Val Asp Phe
20 25 30

Arg Lys Pro Trp Tyr Leu Thr Gly His Ala Ala Ser Leu Gly Ala Asp 35 40 45 48

<210> 1343 <211> 70 <212> PRT <213> Homo sapiens

<210> 1344 <211> 99 <212> PRT <213> Homo sapiens

<400> 1344

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<210> 1345 <211> 112 <212> PRT <213> Homo sapiens

PCT/US01/02687

<210> 1346 <211> 360 <212> PRT <213> Homo sapiens

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<210> 1348 <211> 65 <212> PRT <213> Homo sapiens

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<210> 1352 <211> 701 <212> PRT <213> Homo sapiens

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Phe Asn Arg Val Ile Leu Ser Met Lys Arg Gly Gln Glu Tyr Thr Asp 470 475 Tyr Ile Asn Ala Ser Phe Ile Asp Gly Tyr Arg Gln Lys Asp Tyr Phe 485 490 Ile Ala Thr Gln Gly Pro Leu Ala His Thr Val Glu Asp Phe Trp Arg 500 505 Met Ile Trp Glu Trp Lys Ser His Thr Ile Val Met Leu Thr Glu Val 520 525 Gln Glu Arg Glu Gln Asp Lys Cys Tyr Gln Tyr Trp Pro Thr Glu Gly 535 540 Ser Val Thr His Gly Glu Ile Thr Ile Glu Ile Lys Asn Asp Thr Leu 555 Ser Glu Ala Ile Ser Ile Arg Asp Phe Leu Val Thr Leu Asn Gln Pro 565 570 Gln Ala Arg Gln Glu Glu Gln Val Arg Val Arg Gln Phe His Phe 580 585 His Gly Trp Pro Glu Ile Gly Ile Pro Ala Glu Gly Lys Gly Met Ile 600 605 Asp Leu Ile Ala Ala Val Gln Lys Gln Gln Gln Gln Thr Gly Asn His 615 620 Pro Ile Thr Val His Cys Ser Ala Gly Ala Gly Arg Thr Gly Thr Phe 630 635 Ile Ala Leu Ser Asn Ile Leu Glu Arg Val Lys Ala Glu Gly Leu Leu 645 650 Asp Val Phe Gln Ala Val Lys Ser Leu Arg Leu Gln Arg Pro His Met 660 665 Val Gln Thr Leu Glu Gln Tyr Glu Phe Cys Tyr Lys Val Val Gln Asp 680 Phe Ile Asp Ile Phe Ser Asp Tyr Ala Asn Phe Lys \*

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 $<\!\!400\!\!>1354$  Met Ser Val Cys Lys Tyr Thr Val Tyr Gly Phe Phe Ile Phe Ala Phe

<210> 1355 <211> 4261 <212> PRT <213> Homo sapiens

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Ser Asp Gly Cys Lys Thr Pro Lys Leu Ile Glu Lys Leu Gln Asp Leu
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Asp Val Val Lys Val Arg Cys Gly Ser Gln Phe Ser Ile Ala Leu Thr
                           360
Lys Asp Gly Gln Val Tyr Ser Trp Gly Lys Gly Asp Asn Gln Arg Leu
                       375
                                          380
Gly His Gly Thr Glu Glu His Val Arg Tyr Pro Lys Leu Leu Glu Gly
                   390
                                      395
Leu Gln Gly Lys Lys Val Ile Asp Val Ala Ala Gly Ser Thr His Cys
                                   410
Leu Ala Leu Thr Glu Asp Ser Glu Val His Ser Trp Gly Ser Asn Asp
                               425
Gln Cys Gln His Phe Asp Thr Leu Arg Val Thr Lys Pro Glu Pro Ala
                          440
Ala Leu Pro Gly Leu Asp Thr Lys His Ile Val Gly Ile Ala Cys Gly
                       455
                                          460
Pro Ala Gln Ser Phe Ala Trp Ser Ser Cys Ser Glu Trp Ser Ile Gly
                  470
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Leu Arg Val Pro Phe Val Val Asp Ile Cys Ser Met Thr Phe Glu Gln
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Leu Asp Leu Leu Leu Arg Gln Val Ser Glu Gly Met Asp Gly Ser Ala
                               505
Asp Trp Pro Pro Pro Gln Glu Lys Glu Cys Val Ala Val Ala Thr Leu
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                                             525
Asn Leu Leu Arg Leu Gln Leu His Ala Ala Ile Ser His Gln Val Asp
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                                         540
Pro Glu Phe Leu Gly Leu Gly Leu Gly Ser Ile Leu Leu Asn Ser Leu
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Lys Gln Thr Val Val Thr Leu Ala Ser Ser Ala Gly Val Leu Ser Thr
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Val Gln Ser Ala Ala Gln Ala Val Leu Gln Ser Gly Trp Ser Val Leu
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Leu Pro Thr Ala Glu Glu Arg Ala Arg Ala Leu Ser Ala Leu Leu Pro
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Cys Ala Val Ser Gly Asn Glu Val Asn Ile Ser Pro Gly Arg Arg Phe
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Ser Ala Leu His Ala Ala Ile Thr Ala Glu Ile Gln Asp Ile Glu Ala
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Lys Lys Glu Ala Gln Lys Glu Lys Glu Ile Asp Glu Gln Glu Ala Asn
                               665
Ala Ser Thr Phe His Arg Ser Arg Thr Pro Leu Asp Lys Asp Leu Ile
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Asn Thr Gly Ile Cys Glu Ser Ser Gly Lys Gln Cys Leu Pro Leu Val
                       695
                                          700
Gln Leu Ile Gln Gln Leu Leu Arg Asn Ile Ala Ser Gln Thr Val Ala
                   710
                                      715
Arg Leu Lys Asp Val Ala Arg Arg Ile Ser Ser Cys Leu Asp Phe Glu
               725
                                  730
Gln His Ser Arg Glu Arg Ser Ala Ser Leu Asp Trp Leu Leu Arg Phe
                               745
Gln Arg Leu Leu Ile Ser Lys Leu Tyr Pro Gly Glu Ser Ile Gly Gln
                           760
Thr Ser Asp Ile Ser Ser Pro Glu Leu Met Gly Val Gly Ser Leu Leu
                                           780
Lys Lys Tyr Thr Ala Leu Leu Cys Thr His Ile Gly Asp Ile Leu Pro
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               790
Val Ala Ala Ser Ile Ala Ser Thr Ser Trp Arg His Phe Ala Glu Val
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Val	Val	Ser 835		Val	Leu	Leu	Leu 840	Ser	Lys	Asn	Ala	Asp 845	Leu	Met	Gln
Glu	Ala 850	Gly	Ala	Val	Pro	Leu 855	Leu	Gly	Gly	Leu	Leu 860	Glu	His	Leu	Asp
Arg 865	Phe	Asn	His	Leu	Ala 870	Pro	Gly	Lys	Glu	Arg 875	Asp	Asp	His	Glu	Glu 880
Leu	Ala	Trp	Pro	Gly 885	Ile	Met	Glu	Ser	Phe 890	Phe	Thr	Gly	Gln	Asn 895	Cys
Arg	Asn	Asn	Glu 900	Glu	Val	Thr	Leu	Ile 905	Arg	Lys	Ala	Asp	Leu 910	Glu	Asn
His	Asn	Lуs 915	Asp	Gly	Gly	Phe	Trp 920	Thr	Val	Ile	Asp	Gly 925	Lys	Val	Tyr
Asp	Ile 930	ГÀЗ	Asp	Phe	Gln	Thr 935	Gln	Ser	Leu	Thr	Gly 940	Asn	Ser	Ile	Leu
Ala 945	Gln	Phe	Ala	Gly	Glu 950	Asp	Pro	Val	Val	Ala 955	Leu	Glu	Ala	Ala	Leu 960
Gln	Phe	Glu	Asp	Thr 965	Arg	Glu	Ser	Met	His 970	Ala	Phe	Cys	Val	Gly 975	Gln
Tyr	Leu	Glu	Pro 980	Asp	Gln	Glu	Ile	Val 985	Thr	Ile	Pro	Asp	Leu 990	Gly	Ser
	Ser	995				1	L000				1	1005			
:	Leu 1010				1	L015			•		L020				
1025	Ile		-	1	1030	_			-	1035				_ 1	L040
	Gln		-	1045			_	- :	1050				1	.055	
	His	1	060				3	1065				1	1070		
		L075				1	1080				1	L085			
:	Ile 1090		_		1	L095		_		:	L100	-	_		
1105	Gln			1	L <b>11</b> 0				:	1115				1	L120
Met	Phe	Pro		GIU 125	His	Pro	Val		GLu 1130	Val	GIY	Arg		Leu 135	Leu
	Cys	1	140				1	1145				1	150		
Val	His	Ala L155	Gly	Ala	Leu		Ile 1160	Glu	Gln	Val		His 1165	Arg	Thr	Leu
	Lys 1170				1	L175				:	L180				
1185	Leu			3	L190				:	1195				1	L200
Cys	Ala	Pro		Ile 1205	Glu	Arg	Leu		Phe 1210	Leu	Phe	Asn		Leu 1215	Arg
Pro	Ala		Cys 1220	Asn	Asp	Leu		Ile 1225	Met	Ser	Lys		Lys 1230	Leu	Leu
Ser	Ser	Leu 1235	Pro	Arg	Trp	_	Arg L240	Ile	Ala	Gln	-	Ile 245	Ile	Arg	Glu
	Arg 1250	-	-	_	1	L255	_	-		1	L260		_	_	
Glu 1265	Lys	Ile	Gly		Glu 1270	Glu	Ser	Asp		Glu 1275	Glu	Ala	Cys		Leu 1280

Pro His Ser Pro Ile Asn Val Asp Lys Arg Pro Ile Ala Ile Lys Ser 1285 1290 1295 Pro Lys Asp Lys Trp Gln Pro Leu Leu Ser Thr Val Thr Gly Val His 1300 1305 1310 Lys Tyr Lys Trp Leu Lys Gln Asn Val Gln Gly Leu Tyr Pro Gln Ser 1315 1320 1325 Pro Leu Leu Ser Thr Ile Ala Glu Phe Ala Leu Lys Glu Glu Pro Val 1330 1335 1340 Asp Val Glu Lys Met Arg Lys Cys Leu Leu Lys Gln Leu Glu Arg Ala 1355 1350 Glu Val Arg Leu Glu Gly Ile Asp Thr Ile Leu Lys Leu Ala Ser Lys 1370 1375 1365 Asn Phe Leu Leu Pro Ser Val Gln Tyr Ala Met Phe Cys Gly Trp Gln 1385 1380 1390 Arg Leu Ile Pro Glu Gly Ile Asp Ile Gly Glu Pro Leu Thr Asp Cys 1395 1400 1405 Leu Lys Asp Val Asp Leu Ile Pro Pro Phe Asn Arg Met Leu Leu Glu  $\cdot$ 1415 1420 Val Thr Phe Gly Lys Leu Tyr Ala Trp Ala Val Gln Asn Ile Arg Asn 1430 1435 Val Leu Met Asp Ala Ser Ala Thr Phe Lys Glu Leu Gly Ile Gln Pro 1445 1450 1455 Val Pro Leu Gln Thr Ile Thr Asn Glu Asn Pro Ser Gly Pro Ser Leu 1460 1465 1470 Gly Thr Ile Pro Gln Ala Arg Phe Leu Leu Val Met Leu Ser Met Leu 1475 1480 1485 Thr Leu Gln His Gly Ala Asn Asn Leu Asp Leu Leu Leu Asn Ser Gly 1490 1495 1500 Met Leu Ala Leu Thr Gln Thr Ala Leu Arg Leu Ile Gly Pro Ser Cys 1505 1510 1515 1520 Asp Asn Val Glu Glu Asp Met Asn Ala Ser Ala Gln Gly Ala Ser Ala 1525 1530 1535 Thr Val Leu Glu Glu Thr Arg Lys Glu Thr Ala Pro Val Gln Leu Pro 1540 1545 1550 Val Ser Gly Pro Glu Leu Ala Ala Met Met Lys Ile Gly Thr Arg Val 1555 1560 1565 Met Arg Gly Val Asp Trp Lys Trp Gly Asp Gln Asp Gly Pro Pro 1570 1575 1580 Gly Leu Gly Arg Val Ile Gly Glu Leu Gly Glu Asp Gly Trp Ile Arg 1585 1590 1595 1600 Val Gln Trp Asp Thr Gly Ser Thr Asn Ser Tyr Arg Met Gly Lys Glu 1605 1610 Gly Lys Tyr Asp Leu Lys Leu Ala Glu Leu Pro Ala Ala Ala Gln Pro 1620 1625 1630 Ser Ala Glu Asp Ser Asp Thr Glu Asp Asp Ser Glu Ala Glu Gln Thr 1635 1640 1645 Glu Arg Asn Ile His Pro Thr Ala Met Met Phe Thr Ser Thr Ile Asn 1650 1655 1660 Leu Leu Gln Thr Leu Cys Leu Ser Ala Gly Val His Ala Glu Ile Met 1670 1675 Gln Ser Glu Ala Thr Lys Thr Leu Cys Gly Leu Leu Arg Met Leu Val 1685 1690 1695 Glu Ser Gly Thr Thr Asp Lys Thr Ser Ser Pro Asn Arg Leu Val Tyr 1700 1705 1710 Arg Glu Gln His Arg Ser Trp Cys Thr Leu Gly Phe Val Arg Ser Ile 1715 1720 1725 Ala Leu Thr Pro Gln Val Cys Gly Ala Leu Ser Ser Pro Gln Trp Ile 1730 1735 1740 Thr Leu Leu Met Lys Val Val Glu Gly His Ala Pro Phe Thr Ala Thr

1750 1755 Ser Leu Gln Arg Gln Ile Leu Ala Val His Leu Leu Gln Ala Val Leu 1765 1770 1775 Pro Ser Trp Asp Lys Thr Glu Arg Ala Arg Asp Met Lys Cys Leu Val 1780 1785 1790 Glu Lys Leu Phe Asp Phe Leu Gly Ser Leu Leu Thr Thr Cys Ser Ser 1805 1795 1800 Asp Val Pro Leu Leu Arg Glu Ser Thr Leu Arg Arg Arg Arg Val Arg 1810 1815 1820 Pro Gln Ala Ser Leu Thr Ala Thr His Ser Ser Thr Leu Ala Glu Glu 1825 1830 1835 Val Val Ala Leu Leu Arg Thr Leu His Ser Leu Thr Gln Trp Asn Gly 1845 1850 1855 Leu Ile Asn Lys Tyr Ile Asn Ser Gln Leu Arg Ser Ile Thr His Ser 1860 1865 1870 Phe Val Gly Arg Pro Ser Glu Gly Ala Gln Leu Glu Asp Tyr Phe Pro 1885 1875 1880 Asp Ser Glu Asn Pro Glu Val Gly Gly Leu Met Ala Val Leu Ala Val 1890 1895 1900 Ile Gly Gly Ile Asp Gly Arg Leu Arg Leu Gly Gly Gln Val Met His 1905 1910 1915 Asp Glu Phe Gly Glu Gly Thr Val Thr Arg Ile Thr Pro Lys Gly Lys 1925 1930 1935 Ile Thr Val Gln Phe Ser Asp Met Arg Thr Cys Arg Val Cys Pro Leu 1940 1945 Asn Gln Leu Lys Pro Leu Pro Ala Val Ala Phe Asn Val Asn Asn Leu 1955 1960 1965 Pro Phe Thr Glu Pro Met Leu Ser Val Trp Ala Gln Leu Val Asn Leu 1970 1975 1980 Ala Gly Ser Lys Leu Glu Lys His Lys Ile Lys Lys Ser Thr Lys Gln 1990 1995 Ala Phe Ala Gly Gln Val Asp Leu Asp Leu Leu Arg Cys Gln Gln Leu 2005 2010 Lys Leu Tyr Ile Leu Lys Ala Gly Arg Ala Leu Leu Ser His Gln Asp 2020 2025 2030 Lys Leu Arg Gln Ile Leu Ser Gln Pro Ala Val Gln Glu Thr Gly Thr 2040 2045 Val His Thr Asp Asp Gly Ala Val Val Ser Pro Asp Leu Gly Asp Met 2055 2060 Ser Pro Glu Gly Pro Gln Pro Pro Met Ile Leu Leu Gln Gln Leu Leu 2065 2070 2075 Ala Ser Ala Thr Gln Pro Ser Pro Val Lys Ala Ile Phe Asp Lys Gln 2085 2090 2095 Glu Leu Glu Ala Ala Ala Leu Ala Val Cys Gln Cys Leu Ala Val Glu 2100 2105 2110 Ser Thr His Pro Ser Ser Pro Gly Phe Glu Asp Cys Ser Ser Ser Glu 2115 2120 2125 Ala Thr Thr Pro Val Ala Val Gln His Ile His Pro Ala Arg Val Lys 2130 2135 2140 Arg Arg Lys Gln Ser Pro Val Pro Ala Leu Pro Ile Val Val Gln Leu 2145 2150 2155 Met Glu Met Gly Phe Ser Arg Arg Asn Ile Glu Phe Ala Leu Lys Ser 2165 2170 2175 Leu Thr Gly Ala Ser Gly Asn Ala Ser Ser Leu Pro Gly Val Glu Ala 2180 2185 2190 Leu Val Gly Trp Leu Leu Asp His Ser Asp Ile Gln Val Thr Glu Leu 2195 2200 2205 Ser Asp Ala Asp Thr Val Ser Asp Glu Tyr Ser Asp Glu Glu Val Val 2215 2220

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	Asp	Val	Asp		Ala .	Ala	Tyr	Ser	Met	Ser	Thr	GLY	ALA	vai	vaı
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Thr	Glu	Ser			Tyr	Lys	Lys			Asp	Pne	Leu			ASP
				245	_				250	~7		~1		255	77-7
Asp	Tyr			Tyr	Val	Arg			тте	GIn	vaı	GIA	Met	мес	var
		2	2260			_		265	_		<b></b>		270		
Arg	Cys	Cys	Arg	Ala	Tyr			Val	Cys	Glų			Val	GLY	гàг
		275					280					2285			
Val	Ile	Lys	Leu	Asp	Arg		Gly	Leu	His			Asn	Val	GIn	Cys
- :	2290					295					300		_		<b>-</b>
Asp	$\mathtt{Trp}$	Gln	Gln	Lys	Gly	Gly	Thr	Tyr	$\mathtt{Trp}$	Val	Arg	Tyr	Ile	His	Val
2305					310					315			_		320
Glu	Leu	Ile	Gly	Tyr	Pro	Pro	Pro			Ser	Ser	His			ITe
				2325					330					2335	_
Gly	Asp	Lys	Val	Arg	Val	Lys	Ala	Ser	Val	Thr	Thr			Tyr	Lys
			2340					345					2350		_
$\mathtt{Trp}$	${ t Gly}$	Ser	Val	Thr	His	Gln	Ser	Val	Gly	Val			Ala	Phe	Ser
		2355					2360		•			2365			
Ala	Asn	Gly	Lys	Asp	Ile	Ile	Val	Asp	Phe			Gln	Ser	His	Trp
	2370				. 2	375					2380	_			
Thr	${ t Gly}$	Leu	Leu	Ser	Glu	Met	Glu	Leu			Ser	Ile	His		
2385					2390					2395					400
Val	Thr	Cys	Asp	Gly	Cys	Gln	Met			Ile	Asn	Gly	Ser	Arg	Phe
				2405					2410					2415	
Lys	Cys	Arg	Asn	Cys	Asp	Asp	Phe	Asp	Phe	Cys	Glu	Thr	Cys	Phe	Lys
			2420					2425					2430	_	
Thr	Lys	Lys	His	Asn	Thr	Arg	His	Thr	Phe	Gly				Glu	Pro
		2435					2440					2445			
Gly	Gln	Ser	Ala	Val	Phe	Cys	Gly	Arg	Ser	Gly	Lys	Gln	Leu	Lys	Arg
	2450					2455					2460			_	
Cys	His	Ser	Ser		Pro	Gly	Met	Leu			Ser	Trp	Ser		
2465					2470					2475			_		2480
Val	. Lys	Ser			Val	Ser	Ser				Gln	Ala			Leu
				2485					2490			_		2495	_
Ile	: Asp	Gly			Pro	Cys				Ser	Gly	Ser	GIn	GLY	гÃг
			2500					2505					2510		_
His	Trp	Ile	Arg	Leu	Glu			Pro	Asp	Val	Leu	Val	His	Arg	ьeu
		2515					2520					2525		_	
ГЛS	: Met	Ile	· Val	Asp	Pro			Ser	Ser				Ser	Leu	val
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Val	. Val	Ser	Gly		Asn	Ser	Leu	Asn				Glu	Leu	гĀг	Tnr
2545	5				2550					2555		_	_		2560
$11\epsilon$	a Asn	Ile			Ser						Leu	Leu	Asn	Asp	Tyr
									2570					2575	_
Thi	. ~1	THEFT	· Wie	Δrα	Tvr	Ile	Glu	Ile	Ala	Tle	Lvs	Gln	. Сув	Arg	Ser
	. GTu	. <u> </u>	1113	9	-1-										
			2580					2585					2590		
Sei			2580		Lys			2585				. Leu	2590 Gly		Ile
	gly	7 Ile 2599	2580 Asp	Cys	Lys	Ile	His 2600	2585 Gly	Leu	Ile	Leu	Leu 2605	2590 Gly	Arg	
	gly	7 Ile 2599	2580 Asp	Cys		Ile	His 2600	2585 Gly	Leu	Ile	Leu	Leu 2605	2590 Gly	Arg	
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Arg	Gly Ala 2610	7 Ile 2595 Glu	2580 Asp Glu	Cys Glu	Lys Asp	Ile Leu 2615	His 2600 Ala	2585 Gly Ala	Leu Val	Ile Pro	Leu Phe 2620	Leu 2605 Leu	2590 Gly Ala	Arg Ser	Asp Arg
Arg Ası 2629	Gly Ala 2610 Glu	Ile 2599 Glu Glu	2580 Asp Glu	Cys Glu Glu	Lys Asp Asp 2630	Ile Leu 2615 Glu	His 2600 Ala Lys	2585 Gly Ala Gly	Leu Val Asn	Pro Ser 2635	Leu Phe 2620 Gly	Leu 2605 Leu Ser	2590 Gly Ala Leu	Arg Ser	Asp Arg 2640
Arg Ası 2629	Gly Ala 2610 Glu	Ile 2599 Glu Glu	2580 Asp Glu	Cys Glu Glu	Lys Asp Asp	Ile Leu 2615 Glu	His 2600 Ala Lys	2585 Gly Ala Gly	Leu Val Asn	Pro Ser 2635	Leu Phe 2620 Gly	Leu 2605 Leu Ser	2590 Gly Ala Leu	Arg Ser Ile	Asp Arg 2640 Val
Arg Ası 2629 Lya	Gly J Ala 2610 Glu Glu Glu Glu Glu Glu	Z595 2595 Glu Glu Ala	2580 Asp Glu Glu Ala	Cys Glu Glu Gly 2645	Lys Asp Asp 2630 Leu	Ile Leu 2615 Glu Glu	His 2600 Ala Lys	2585 Gly Ala Gly	Leu Val Asn Ala 2650	Pro Ser 2635	Leu Phe 2620 Gly	Leu 2605 Leu Ser Ser	2590 Gly Ala Leu	Ser Ile Lys 2655	Asp Arg 2640 Val
Arg Ası 2629 Lya	Gly J Ala 2610 Glu Glu Glu Glu Glu Glu	Z595 2595 Glu Glu Ala	2580 Asp Glu Glu Ala	Cys Glu Glu Gly 2645	Lys Asp Asp 2630 Leu	Ile Leu 2615 Glu Glu	His 2600 Ala Lys	2585 Gly Ala Gly	Leu Val Asn Ala 2650	Pro Ser 2635	Leu Phe 2620 Gly	Leu 2605 Leu Ser Ser	2590 Gly Ala Leu Thr	Ser Ile Lys 2655	Asp Arg 2640 Val
Arg Ası 2629 Lys	Gly Ala 2610 Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu	Z595 Glu Glu Glu Hala Trp	2580 Asp Glu Glu Ala Gly 2660	Cys Glu Glu Gly 2645 Leu	Lys Asp Asp 2630 Leu Asn	Ile Leu 2615 Glu Glu Asp	His 2600 Ala Lys Ser	2585 Gly Ala Gly Ala Asp 2665	Val Asn Ala 2650	Pro Ser 2635 Thr	Leu Phe 2620 Gly Ile	Leu 2605 Leu Ser Ser Arg	2590 Gly Ala Leu Thr Leu 2670	Ser Ile Lys 2655	Asp Arg 2640 Val Gly
Arg Ası 2629 Lys	Gly Ala 2610 Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu	Z595 Glu Glu Glu Hala Trp	2580 Asp Glu Glu Ala Gly 2660	Cys Glu Glu Gly 2645 Leu	Lys Asp Asp 2630 Leu	Ile Leu 2615 Glu Glu Asp	His 2600 Ala Lys Ser Lys	2585 Gly Ala Gly Ala Asp 2665 Ser	Val Asn Ala 2650	Pro Ser 2635 Thr	Leu Phe 2620 Gly Ile	Leu 2605 Leu Ser Ser Gly	2590 Gly Ala Leu Thr Leu 2670	Ser Ile Lys 2655	Asp Arg 2640 Val Gly
Ass 2625 Lys Pho	Gly Ala 2610 Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu	TILE 2599 Glu Glu Ala Trp 3 Ile 2679	2580 Asp Glu Glu Ala Ala OGly 2660 Lys	Cys Glu Glu Gly 2645 Leu	Lys Asp Asp 2630 Leu Asn	Leu 2615 Glu Glu Asp	His 2600 Ala Lys Ser Dys	2585 Gly Ala Gly Ala Asp 2665 Ser	Val Asn Ala 2650 Glu	Pro Ser 2635 Thr	Leu Phe 2620 Gly Ile Gly	Leu 2605 Leu Ser Arg Gly	2590 Gly Ala Leu Thr Leu 2670 Ala	Ser Ile Lys 2655 Lys Lys	Asp Arg 2640 Val Gly Asn

2700 2695 Glu Gly Lys Val Tyr Ala Cys Gly Glu Ala Thr Asn Gly Arg Leu Gly 2705 2710 2715 2720 Leu Gly Ile Ser Ser Gly Thr Val Pro Ile Pro Arg Gln Ile Thr Ala 2725 2730 2735 Leu Ser Ser Tyr Val Val Lys Lys Val Ala Val His Ser Gly Gly Arg 2740 2745 2750 His Ala Thr Ala Leu Thr Val Asp Gly Lys Val Phe Ser Trp Gly Glu 2755 2760 2765 Gly Asp Asp Gly Lys Leu Gly His Phe Ser Arg Met Asn Cys Asp Lys 2770 2775 2780 Pro Arg Leu Ile Glu Ala Leu Lys Thr Lys Arg Ile Arg Asp Ile Ala 2785 2790 2795 Cys Gly Ser Ser His Ser Ala Ala Leu Thr Ser Ser Gly Glu Leu Tyr 2805 2810 2815 Thr Trp Gly Leu Gly Glu Tyr Gly Arg Leu Gly His Gly Asp Asn Thr 2820 2825 2830 Thr Gln Leu Lys Pro Lys Met Val Lys Val Leu Leu Gly His Arg Val 2845 2835 2840 Ile Gln Val Ala Cys Gly Ser Arg Asp Ala Gln Thr Leu Ala Leu Thr 2855 2860 Asp Glu Gly Leu Val Phe Ser Trp Gly Asp Gly Asp Phe Gly Lys Leu 2865 2870 2875 2880 Gly Arg Gly Gly Ser Glu Gly Cys Asn Ile Pro Gln Asn Ile Glu Arg  $2885 \hspace{1cm} 2890 \hspace{1cm} 2895$ Leu Asn Gly Gln Gly Val Cys Gln Ile Glu Cys Gly Ala Gln Phe Ser 2905 2910 Leu Ala Leu Thr Lys Ser Gly Val Val Trp Thr Trp Gly Lys Gly Asp 2920 2925 Tyr Phe Arg Leu Gly His Gly Ser Asp Val His Val Arg Lys Pro Gln 2930 2935 2940 Val Val Glu Gly Leu Arg Gly Lys Lys Ile Val His Val Ala Val Gly 2950 2955 Ala Leu His Cys Leu Ala Val Thr Asp Ser Gly Gln Val Tyr Ala Trp 2965 2970 Gly Asp Asn Asp His Gly Gln Gln Gly Asn Gly Thr Thr Thr Val Asn 2980 2985 2990 Arg Lys Pro Thr Leu Val Gln Gly Leu Glu Gly Gln Lys Ile Thr Arg 2995 3000 3005 Val Ala Cys Gly Ser Ser His Ser Val Ala Trp Thr Thr Val Asp Val 3010 3015 3020 Ala Thr Pro Ser Val His Glu Pro Val Leu Phe Gln Thr Ala Arg Asp 3025 3030 3035 3040 Pro Leu Gly Ala Ser Tyr Leu Gly Val Pro Ser Asp Ala Asp Ser Ser 3045 3050 3055 Ala Ala Ser Asn Lys Ile Ser Gly Ala Ser Asn Ser Lys Pro Asn Arg 3060 3065 3070 Pro Ser Leu Ala Lys Ile Leu Leu Ser Leu Asp Gly Asn Leu Ala Lys 3075 3080 3085 Gln Gln Ala Leu Ser His Ile Leu Thr Ala Leu Gln Ile Met Tyr Ala 3095 3100 Arg Asp Ala Val Val Gly Ala Leu Met Pro Ala Ala Met Ile Ala Pro 3110 3115 3120 Val Glu Cys Pro Ser Phe Ser Ser Ala Ala Pro Ser Asp Ala Ser Ala 3125 3130 3135 Met Ala Ser Pro Met Asn Gly Glu Glu Cys Met Leu Ala Val Asp Ile 3140 3145 3150 Glu Asp Arg Leu Ser Pro Asn Pro Trp Gln Glu Lys Arg Glu Ile Val 3160 3165

Ser Ser Glu Asp Ala Val Thr Pro Ser Ala Val Thr Pro Ser Ala Pro 3175 3180 Ser Ala Ser Ala Arg Pro Phe Ile Pro Val Thr Asp Asp Leu Gly Ala 3190 3195 3200 Ala Ser Ile Ile Ala Glu Thr Met Thr Lys Thr Lys Glu Asp Val Glu 3205 3210 3215 Ser Gln Asn Lys Ala Ala Gly Pro Glu Pro Gln Ala Leu Asp Glu Phe 3220 3225 3230 Thr Ser Leu Leu Ile Ala Asp Asp Thr Arg Val Val Asp Leu Leu 3235 3240 3245 Lys Leu Ser Val Cys Ser Arg Ala Gly Asp Arg Gly Arg Asp Val Leu 3250 3255 3260 Ser Ala Val Leu Ser Gly Met Gly Thr Ala Tyr Pro Gln Val Ala Asp 3270 3275 Met Leu Glu Leu Cys Val Thr Glu Leu Glu Asp Val Ala Thr Asp 3290 3285 Ser Gln Ser Gly Arg Leu Ser Ser Gln Pro Val Val Glu Ser Ser 3300 3305 3310 His Pro Tyr Thr Asp Asp Thr Ser Thr Ser Gly Thr Val Lys Ile Pro 3315 3320 3325 Gly Ala Glu Gly Leu Arg Val Glu Phe Asp Arg Gln Cys Ser Thr Glu 3330 3335 3340 Arg Arg His Asp Pro Leu Thr Val Met Asp Gly Val Asn Arg Ile Val 3345 3350 3355 3360 Ser Val Arg Ser Gly Arg Glu Trp Ser Asp Trp Ser Ser Glu Leu Arg 3365 3370 3375 Ile Pro Gly Asp Glu Leu Lys Trp Lys Phe Ile Ser Asp Gly Ser Val 3380 3385 3390 Asn Gly Trp Gly Trp Arg Phe Thr Val Tyr Pro Ile Met Pro Ala Ala 3395 3400 3405 Gly Pro Lys Glu Leu Leu Ser Asp Arg Cys Val Leu Ser Cys Pro Ser 3410 3415 3420 Met Asp Leu Val Thr Cys Leu Leu Asp Phe Arg Leu Asn Leu Ala Ser 3425 3430 3435 3440 Asn Arg Ser Ile Val Pro Arg Leu Ala Ala Ser Leu Ala Ala Cys Ala 3445 3450 3455 Gln Leu Ser Ala Leu Ala Ala Ser His Arg Met Trp Ala Leu Gln Arg 3460 3465 3470 Leu Arg Lys Leu Leu Thr Thr Glu Phe Gly Gln Ser Ile Asn Ile Asn 3475 3480 3485 Arg Leu Leu Gly Glu Asn Asp Gly Glu Thr Arg Ala Leu Ser Phe Thr 3490 3495 3500 Gly Ser Ala Leu Ala Ala Leu Val Lys Gly Leu Pro Glu Ala Leu Gln 3505 3510 3515 Arg Gln Phe Glu Tyr Glu Asp Pro Ile Val Arg Gly Gly Lys Gln Leu 3525 3530 Leu His Ser Pro Phe Phe Lys Val Leu Val Ala Leu Ala Cys Asp Leu 3540 3545 Glu Leu Asp Thr Leu Pro Cys Cys Ala Glu Thr His Lys Trp Ala Trp 3555 3560 3565 Phe Arg Arg Tyr Cys Met Ala Ser Arg Val Ala Val Ala Leu Asp Lys 3570 3575 3580 Arg Thr Pro Leu Pro Arg Leu Phe Leu Asp Glu Val Ala Lys Lys Ile 3585 3590 3595 Arq Glu Leu Met Ala Asp Ser Glu Asn Met Asp Val Leu His Glu Ser 3605 3610 3615 His Asp Ile Phe Lys Arg Glu Gln Asp Glu Gln Leu Val Gln Trp Met 3620 3625 3630 Asn Arg Arg Pro Asp Asp Trp Thr Leu Ser Ala Gly Gly Ser Gly Thr

3640 Ile Tyr Gly Trp Gly His Asn His Arg Gly Gln Leu Gly Gly Ile Glu 3650 3655 3660 Gly Ala Lys Val Lys Val Pro Thr Pro Cys Glu Ala Leu Ala Thr Leu 3665 3670 3675 3680 Arg Pro Val Gln Leu Ile Gly Gly Glu Gln Thr Leu Phe Ala Val Thr 3685 3690 3695 Ala Asp Gly Lys Leu Tyr Ala Thr Gly Tyr Gly Ala Gly Gly Arg Leu 3700 3705 3710 Gly Ile Gly Gly Thr Glu Ser Val Ser Thr Pro Thr Leu Leu Glu Ser 3715 3720 3725 Ile Gln His Val Phe Ile Lys Lys Val Ala Val Asn Ser Gly Gly Lys 3730 3735 3740 His Cys Leu Ala Leu Ser Ser Glu Gly Glu Val Tyr Ser Trp Gly Glu 3745 3750 3755 Ala Glu Asp Gly Lys Leu Gly His Gly Asn Arg Ser Pro Cys Asp Arg 3765 3770 3775 Pro Arg Val Ile Glu Ser Leu Arg Gly Ile Glu Val Val Asp Val Ala 3780 3785 3790 Ala Gly Gly Ala His Ser Ala Cys Val Thr Ala Ala Gly Asp Leu Tyr 3795 3800 3805 Thr Trp Gly Lys Gly Arg Tyr Gly Arg Leu Gly His Ser Asp Ser Glu 3810 3815 3820 Asp Gln Leu Lys Pro Lys Leu Val Glu Ala Leu Gln Gly His Arg Val 3825 3830 3835 3840 Val Asp Ile Ala Cys Gly Ser Gly Asp Ala Gln Thr Leu Cys Leu Thr 3845 3850 3855 Asp Asp Asp Thr Val Trp Ser Trp Gly Asp Gly Asp Tyr Gly Lys Leu 3860 3865 3870 Gly Arg Gly Gly Ser Asp Gly Cys Lys Val Pro Met Lys Ile Asp Ser 3875 3880 3885 Leu Thr Gly Leu Gly Val Val Lys Val Glu Cys Gly Ser Gln Phe Ser 3890 3895 3900 Val Ala Leu Thr Lys Ser Gly Ala Val Tyr Thr Trp Gly Lys Gly Asp 3910 3915 Tyr His Arg Leu Gly His Gly Ser Asp Asp His Val Arg Arg Pro Arg 3925 3930 3935 Gln Val Gln Gly Leu Gln Gly Lys Lys Val Ile Ala Ile Ala Thr Gly 3940 3945 3950 Ser Leu His Cys Val Cys Cys Thr Glu Asp Gly Glu Val Tyr Thr Trp 3960 3965 Gly Asp Asn Asp Glu Gly Gln Leu Gly Asp Gly Thr Thr Asn Ala Ile 3970 3975 3980 Gln Arg Pro Arg Leu Val Ala Ala Leu Gln Gly Lys Lys Val Asn Arg Val Ala Cys Gly Ser Ala His Thr Leu Ala Trp Ser Thr Ser Lys Pro 4005 4010 4015 Ala Ser Ala Gly Lys Leu Pro Ala Gln Val Pro Met Glu Tyr Asn His 4020 4025 4030 Leu Gln Glu Ile Pro Ile Ile Ala Leu Arg Asn Arg Leu Leu Leu 4035 4040 4045 His His Leu Ser Glu Leu Phe Cys Pro Cys Ile Pro Met Phe Asp Leu 4050 4055 4060 Glu Gly Ser Leu Asp Glu Thr Gly Leu Gly Pro Ser Val Gly Phe Asp 4065 4070 4075 Thr Leu Arg Gly Ile Leu Ile Ser Gln Gly Lys Glu Ala Ala Phe Arg 4085 4090 4095 Lys Val Val Gln Ala Thr Met Val Arg Asp Arg Gln His Gly Pro Val 4105

Val Glu Leu Asn Arq Ile Gln Val Lys Arg Ser Arg Ser Lys Gly Gly 4120 Leu Ala Gly Pro Asp Gly Thr Lys Ser Val Phe Gly Gln Met Cys Ala 4135 4140 Lys Met Ser Ser Phe Gly Pro Asp Ser Leu Leu Pro His Arg Val 4145 4150 4155 Trp Lys Val Lys Phe Val Gly Glu Ser Val Asp Asp Cys Gly Gly 4170 4175 4165 Tyr Ser Glu Ser Ile Ala Glu Ile Cys Glu Glu Leu Gln Asn Gly Leu 4185 4180 4190 Thr Pro Leu Leu Ile Val Thr Pro Asn Gly Arg Asp Glu Ser Gly Ala 4200 4205 Asn Arg Asp Cys Tyr Leu Leu Ser Pro Ala Ala Arg Ala Pro Val His 4215 4220 Ser Ser Met Phe Arg Phe Leu Gly Val Leu Leu Gly Ile Ala Ile Arg 4230 4235 Thr Gly Ser Pro Leu Ser Leu Asn Pro Cys Arg Ala Leu Ser Gly Ser 4245 4250 Ser Trp Leu Gly \* 4260

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<223> Xaa = any amino acid or nothing

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Phe Phe Phe Ala Phe Phe Arg Thr 50

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<212> PRT

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<400> 1361

Met Phe Val Leu Phe Leu Ile Leu Val Leu Arg Asn His Phe Leu Val 10 Thr Ile Lys Tyr Gly Val Gly Cys Gly Phe Ile Ile Ser Val Cys Leu 20 25 Arg Ala Lys His Phe Asn Phe Asp Glu Ala Gln Phe Val Ser Phe Phe 40 45 35 Leu Cys Asp Ser Cys Phe Cys Leu Leu Arg Asn Leu Pro Thr Gln Arg 60 55 Leu Gln Arg Phe Phe Phe Cys Trp Phe Phe Leu Ile

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<211> 106

<212> PRT

<213> Homo sapiens

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Leu Lys Ile Met Cys Lys Gln Leu Leu \*

<210> 1363

<211> 57

<212> PRT

<213> Homo sapiens

<400> 1363

Met Ala Trp Lys Pro Leu Gly Arg Gln Ala Val Leu Arg Glu Thr Pro 5 . 10 Leu Ala Thr Leu Cys Ile Asp Arg Gln Val Ser Ser Ser Leu Val

20 25 30

Gln Glu Gly Phe His Ser Lys Ser Cys His Cys Leu Gly Asp Ser Phe
35 40 45

Arg Glu Lys Asn Gln Val Val Gly \*
50 55 56

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<210> 1366 <211> 58 <212> PRT <213> Homo sapiens

Leu Asp Leu Tyr Ser Ser Leu Phe Phe \* 50 . 55 57

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<213> Homo sapiens

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<211> 96

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<213> Homo sapiens

<400> 1368

 Met
 Gly
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 Ser
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 Leu
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 Glu
 Ile
 Ser
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 Arg
 Gly
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<210> 1371

<223> Xaa = any amino acid or nothing

<400> 1371 Met Leu Tyr Phe Gln Leu Val Ile Met Ala Gly Thr Val Leu Leu Ala 5 10 Tyr Tyr Phe Glu Cys Thr Asp Thr Phe Gln Val His Ile Gln Gly Phe 25 Phe Cys Gln Asp Gly Asp Leu Met Lys Pro Tyr Pro Gly Thr Glu Glu Glu Ser Phe Ile Thr Pro Leu Val Leu Tyr Cys Val Leu Ala Ala Thr 55 Pro Thr Ala Ile Ile Phe Ile Gly Glu Ile Ser Met Tyr Phe Ile Lys 70 75 Ser Thr Arg Glu Ser Leu Ile Ala Gln Glu Lys Thr Ile Leu Thr Gly 85 90 . Glu Cys Cys Tyr Leu Asn Pro Leu Leu Arg Arg Ile Ile Arg Phe Thr 100 105 Gly Val Phe Ala Phe Gly Leu Phe Ala Thr Asp Ile Phe Val Asn Ala 120 125 Gly Gln Val Val Thr Gly His Leu Thr Pro Tyr Phe Leu Thr Val Cys 135 140 Lys Pro Asn Tyr Thr Ser Ala Asp Cys Gln Ala His His Gln Phe Ile 150 155 Asn Asn Gly Asn Ile Cys Thr Gly Asp Leu Gly Ser Asp Arg Lys Gly 165 170 175 Ser Glu Ile Leu Ser Leu Gln Thr Arg Cys Ser Glu His Leu Leu Arg 185

<210> 1372 <211> 99 <212> PRT <213> Homo sapiens

<400> 1372 Met Phe Leu Ser Leu Ser Leu Thr Leu Cys Leu Cys Phe Ser Phe Phe 5 10 Cys Leu Tyr Leu Ser Leu Ser Leu Tyr Leu Arg Ser Phe Phe Cys Leu 25 Pro Phe His Val Ser Val Phe Leu Cys Leu Phe Pro Ser Val Leu Phe 40 Leu Ser Val Ala Leu Gly Ser Pro Glu Asn His Ile Ser Trp Arg Lys 60 55 Val Gly Glu Glu Leu Lys Leu Ala Ser His Arg Asn Phe Cys Ser Leu 75 70 Ile Gln Met Met Arg Ser Asn Lys Pro Ser Pro Ser Arg Gln Arg Gly 90 Trp Ala \* 98

<210> 1373 <211> 69 <212> PRT <213> Homo sapiens

<400> 1373 Met Leu His Thr Pro Gln Thr Cys Arg Pro Gly Leu Cys Val Leu Ala 1 5 10 Ser Arg Pro Val Leu Tyr Thr Leu Cys Leu Leu Ile Pro Val Leu Cys 20 25 Gly Asp Thr Phe Trp Ala Ser Trp Ser Leu Leu Thr Lys Ala Thr Pro 45 40 Ser Ser Leu Leu Cys Leu Ser Asp Lys Ser Ile Pro Ser Leu Ile Ser 60 50 Lys Gly Asp Ser \* 65 68

<210> 1374 <211> 296 <212> PRT <213> Homo sapiens

<400> 1374 Met Arg Ser Lys Ile Met Ile His Ile His Ile Phe Leu Leu Ala Ser 10 Phe Arg Phe Lys Glu His Val Gln Asn Asn Leu Pro Arg Asp Leu Leu 20 Thr Gly Glu Gln Phe Ile Gln Leu Arg Arg Glu Leu Ala Ser Val Asn 40 Gly His Ser Gly Asp Asp Gly Pro Pro Gly Asp Asp Leu Pro Ser Gly 55 Ile Glu Asp Ile Thr Asp Pro Ala Lys Leu Ile Thr Glu Ile Glu Asn 70 75 Met Arg His Arg Ile Ile Glu Ile His Gln Glu Met Phe Asn Tyr Asn 85 90 Glu His Glu Val Ser Lys Arg Trp Thr Phe Glu Glu Gly Ile Lys Arg 105 Pro Tyr Phe His Val Lys Pro Leu Glu Lys Ala Gln Leu Lys Asn Trp 120 Lys Glu Tyr Leu Glu Phe Glu Ile Glu Asn Gly Thr His Glu Arg Val 135 140 Val Val Leu Phe Glu Arg Cys Val Ile Ser Cys Ala Leu Tyr Glu Glu 150 155 Phe Trp Ile Lys Tyr Ala Lys Tyr Met Glu Asn His Ser Ile Glu Gly 165 170 Val Arg His Val Phe Ser Arg Ala Cys Thr Ile His Leu Pro Lys Lys 185 Pro Met Val His Met Leu Trp Ala Ala Phe Glu Glu Gln Gln Gly Asn 200 205 Ile Asn Glu Ala Arg Asn Ile Leu Lys Thr Phe Glu Glu Cys Val Leu 215 220 Gly Leu Ala Met Val Arg Leu Arg Arg Val Ser Leu Glu Arg Arg His 230 235 Gly Asn Leu Glu Glu Ala Glu His Leu Leu Gln Asp Ala Ile Lys Asn 245 250 Ala Lys Ser Asn Asn Glu Ser Ser Phe Tyr Ala Val Lys Leu Ala Arg 260 265 His Leu Phe Lys Ile Gln Lys Asn Leu Pro Lys Ser Arg Lys Val Leu 280 285 Leu Glu Ala Ile Glu Arg Asp Lys 295 296

<210> 1375 <211> 75 <212> PRT <213> Homo sapiens

<400> 1375

<210> 1376 <211> 61 <212> PRT <213> Homo sapiens

<210> 1377 <211> 110 <212> PRT <213> Homo sapiens

<400> 1377 Met Trp Val Trp Val Thr Ala Ala His Leu Leu Cys Ser Leu Ala Ala 10 Ser Phe Val Lys Lys Ser Leu Gly Lys Leu Arg Val Asp Val Cys 20 25 Arg Ser Pro Pro Pro Glu Gly Ser Arg Thr Gln Thr Ser Ser Ser Leu Phe Tyr Arg Gly Gly Asn Gly Ala Ser Tyr Ala Asn Tyr Ile Leu His 55 60 His Thr Met Ala Leu Glu Gly Gln Arg Ser His Trp Ala Pro Cys Val . 70 · 75 Ser Cys Pro Ala Gln Gly Leu Ala Leu Arg Arg Gly Cys Thr Thr Phe 85 Leu His Lys Asn Lys Gly Gly Thr Glu Ala Val Thr Val \* 100 105

<210> 1378 <211> 47 <212> PRT <213> Homo sapiens

<210> 1379 <211> 140 <212> PRT <213> Homo sapiens

<400> 1379 Met Arg His Pro Ser Pro Trp Pro Phe Leu Phe Phe Cys Phe Val Pro 10 Ala Thr Leu Arg Ser Phe Pro Ser Gly Leu Val Trp Pro Gly Cys Trp 20 25 Trp Glu Pro Arg Ala Ser Pro Ser Ser Leu Ala Pro Gly Met Lys Ser 40 Gln Leu Trp Ala Ala Ala Trp Arg Pro Gly Thr Ser Leu Gln Gly Met 55 Ala Gly Ile Leu Arg Gln Ala Ala Glu Ala Gly Pro Ala Gly Val Ala 70 75 Leu Ile Leu Ile Lys Gly Thr Gly Asn Glu Glu Pro Leu Gly Pro Leu 90 85 Pro Ser Arg Cys Leu Cys Pro Pro Pro Glu Glu Pro Arg Phe His Trp 100 105 Ala Leu Gly Lys Glu Pro Thr Gly Pro Gly Arg Pro Gln Pro Val Gln 120 His His Ile Glu Gly Pro His Pro Val Gly Phe Gly 130 135

<210> 1380 <211> 50 <212> PRT <213> Homo sapiens

<210> 1381 <211> 78 <212> PRT <213> Homo sapiens

Val Gly Gly Val Phe Ala Leu Val Thr Ala Val Cys Cys Leu Ala 35 40 45

Asp Gly Ala Leu Ile Tyr Arg Lys Leu Leu Phe Asn Pro Ser Gly Pro 50 55 60

Tyr Gln Lys Lys Pro Val His Glu Lys Lys Glu Val Leu \* 65 70 77

<210> 1382 <211> 57 <212> PRT <213> Homo sapiens

<210> 1383 <211> 64 <212> PRT <213> Homo sapiens

<210> 1384 <211> 67 <212> PRT <213> Homo sapiens

60 55 50 Pro His \* 65 66 <210> 1385 <211> 50 <212> PRT <213> Homo sapiens <400> 1385 Met Leu Val Leu Phe Val Ala Thr Trp Ser Asp Leu Gly Leu Cys Lys 10 Lys Arg Pro Lys Pro Gly Gly Trp Asn Thr Gly Gly Cys Arg Tyr Pro 25 20 Gly Leu Ala Cys Pro Leu Gly Arg Pro Pro Gly Gln Trp Gly Ala Thr Val \* 49 <210> 1386 <211> 123 <212> PRT <213> Homo sapiens <400> 1386 Met Lys Trp Val Thr Phe Ile Ser Leu Leu Phe Leu Phe Ser Ser Ala 10 Tyr Ser Arg Gly Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val 20 25 Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu Leu 40 45 Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn 55 Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu 70 75 Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro 85 90 Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val 100 105 Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe 120

<210> 1387 <211> 65 <212> PRT <213> Homo sapiens

<400> 1387
Met Pro Arg Leu Phe Ser Pro Leu Ile Leu Leu His Thr Leu Ser Leu
1 5 10 15

<210> 1388 <211> 56 <212> PRT <213> Homo sapiens

<210> 1389 <211> 76 <212> PRT <213> Homo sapiens

<210> 1390 <211> 149 <212> PRT <213> Homo sapiens

 $<\!400>$  1390 Met Ala Ala Ser Pro Ala Arg Pro Ala Val Leu Ala Leu Thr Gly Leu 1 5 10 15 Ala Leu Leu Leu Leu Cys Trp Gly Pro Gly Gly Ile Ser Gly Asn

25 Lys Leu Lys Leu Met Leu Gln Lys Arg Glu Ala Pro Val Pro Thr Lys 40 Thr Lys Val Ala Val Asp Glu Asn Lys Ala Lys Glu Phe Leu Gly Ser 55 Leu Lys Arg Gln Lys Arg Gln Leu Trp Asp Arg Thr Arg Pro Glu Val 70 75 Gln Gln Trp Tyr Gln Gln Phe Leu Tyr Met Gly Phe Asp Glu Ala Lys 85 90 Phe Glu Asp Asp Ile Thr Tyr Trp Leu Asn Arg Asp Arg Asn Gly His 100 105 Glu Tyr Tyr Gly Asp Tyr Tyr Gln Arg His Tyr Asp Glu Asp Ser Ala 115 120 125 Ile Gly Pro Arg Ser Pro Tyr Gly Phe Arg His Gly Ala Ser Val Asn Tyr Asp Asp Tyr 145 148

<210> 1391 <211> 125 <212> PRT <213> Homo sapiens

<400> 1391

Met Val Met Gly Trp His Trp Pro Gln Gly Leu Gly Leu Ser Leu Ser 10 Leu Cys Pro Ser Asp Leu Asp Gly Trp Val Ser Arg Glu Val Pro Leu 20 25 Leu Asp Arg Pro Gln Ala Leu Pro Pro Cys Val Gln Ile Leu Ser Ala 40 Pro Ala Ser Thr Ser Cys Pro Ser Ala Leu Ser Pro Trp His Asp Pro 55 . 60 Gly Leu Pro Val Thr Ser Gln Asn His Phe Ala Trp Phe Pro Leu Gly 70 Ser Lys Ala Cys Leu Gly Pro Ser Ile Asp Arg Glu Ala Val Lys Glu 85 90 Ile Asn Ala Glu Glu Gly Val Arg Arg Gln Thr Gln Gly Pro Ile Lys 100 105 Val Arg Lys Gln Ala Gly Cys Gly Gly Ser Cys Leu \* 120

<210> 1392 <211> 56 <212> PRT <213> Homo sapiens

Ile Ile Leu Pro Leu His Pro \* 50 55

<210> 1393 <211> 55 <212> PRT

<213> Homo sapiens

<400> 1393

<210> 1394 <211> 51 <212> PRT

<213> Homo sapiens

<400> 1394

<210> 1395 <211> 105

<212> PRT

<213> Homo sapiens

<400> 1395

Met Pro Cys Phe Met Pro Asn Pro Gly Ala Val Leu Gly Leu Pro Pro 5 10 15 Trp Leu Leu Ser Thr Gln Arg Leu Thr His Thr Arg Ala Tyr Leu Asn 20 25 30 Trp Leu Ala Ser Asp Arg Trp Met Arg Arg His Trp Arg Thr Gly Glu 40 Ser Gln Val Glu Arg Ser Ser Arg Pro Trp Trp Glu Thr Gln His Leu 55 60 Ser Pro Ala Ser Leu Gly Arg Arg Pro Ala Pro Gly Leu Gln Glu His . 75 70 Phe Leu Asp Thr Asp Gly Lys Val Ala Asp Ser Gly Leu Gln Met Gly

85 90 95
Phe Gly Leu Leu Ser Leu Pro Ser Ile
100 105

<210> 1396 <211> 49 <212> PRT <213> Homo sapiens

<400> 1396

 Met
 Leu
 Cys
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<210> 1397 <211> 104 <212> PRT <213> Homo sapiens

<400> 1397

Met Leu Ser Trp Val Phe Pro Gly Ser Val Phe Gly Leu Cys Leu Ser 10 Val Trp Val Phe Trp His Gln Ala Ser Leu Gly Arg Ala Ser Gly Cys 20 Ala Pro Ala Leu Arg Val Gly Leu Ile Pro Gly Cys Arg Gly Leu Arg 40 Ala Glu Leu Phe His Leu Glu Asp Lys Asp Gly Ser Ser Gly Leu Gly 55 60 Gly Gly Gly Ala Gly His Asp Leu Ile Leu Arg Arg Ala Trp Cys 75 Trp Gly Leu Thr Asp Asp Gly Glu Ala Arg Val Gln Ala Leu Gly Met 85 Thr Pro Gly Ile Ala Phe Ser \* 100 103

<210> 1398 <211> 82 <212> PRT <213> Homo sapiens

<210> 1399 <211> 68 <212> PRT <213> Homo sapiens

<400> 1399 Met Gly Ala Val Leu Leu Val Cys Leu Gln Thr Ser Ile Ala Ala Arg 10 1 Asp Asp Leu Lys Asp Ala Val Asp Ser Gly Leu Leu Leu Ala Asn Ser 20 . 25 Leu Ser His Phe Val Pro Leu Val Val Arg Asn Tyr Leu Val His Cys 45 35 40 Asn Leu Leu Gln Thr Leu Lys Phe Leu Leu Gly Asn Cys Thr Ala Gly 50 55 Lys Ala Ser \* 67

<210> 1400 <211> 54 <212> PRT <213> Homo sapiens

<210> 1401 <211> 232 <212> PRT <213> Homo sapiens

Val Ile Arg Ala Leu Arg Leu Trp Arg Thr Ala Lys Leu Gln Val Thr Leu Lys Lys Tyr Ser Val His Leu Glu Asp Met Ala Thr Asn Ser Arg 55 Ala Phe Thr Asn Leu Val Arg Lys Ala Leu Arg Leu Ile Gln Glu Thr 75 70 Glu Val Ile Ser Arg Gly Phe Thr Leu Leu Leu Asp Arg Val Ser Ala 85 90 Ala Cys Pro Phe Asn Lys Ala Gly Gln His Pro Ser Gln His Leu Ile 105 Gly Leu Arg Lys Ala Val Tyr Arg Thr Leu Arg Ala Ser Phe Gln Ala 120 125 Ala Arg Leu Ala Thr Leu Tyr Met Leu Lys Asn Tyr Pro Leu Asn Ser 130 135 Glu Ser Asp Asn Val Thr Asn Tyr Ile Cys Val Val Pro Phe Lys Glu 150 155 Leu Gly Leu Gly Leu Ser Glu Glu Gln Ile Ser Glu Glu Glu Ala His 165 170 Lys Leu Tyr Arg Trp Leu Gln Pro Ala Cys Ile Glu Gly Phe Val Pro 185 Thr Leu Gly Gly Thr Glu Phe Arg Val Leu Gln Thr Val Ser Pro Ile 195 200 Thr Phe Tyr Ser Gln Phe Thr Ser Trp Ala Leu Thr Tyr Ser Ser Thr 215 220 Ser Ala Ser Ser Tyr Leu Ile \* 230 231

<210> 1402

<211> 48

<212> PRT

<213> Homo sapiens

## <400> 1402

 Met Ala Pro Ala Arg Pro Trp Trp Leu Thr Pro Val Ile Pro Ala Leu

 1
 5
 10
 15

 Trp Glu Ala Glu Glu Asp Gly Ser Arg Gly Gln Glu Phe Lys Thr Ser
 20
 25
 30

 Leu Ala Ser Met Val Lys Pro Arg Leu Tyr Tyr Lys Tyr Lys Asn \*
 40

<210> 1403

<211> 53

<212> PRT

<213> Homo sapiens

## <400> 1403

 Met Leu Trp Arg Leu Ile Ile Ile Leu Cys Glu Ala Leu Gln Arg Lys

 1
 5
 10
 15

 Ser Arg Leu Leu Ala Asp Cys Asp His Phe Ser Phe Pro Asn Arg Tyr
 20
 25
 30

 Glu Arg Lys Leu Leu Leu Asp Phe Thr Val Arg Ile Trp Ile Gln Thr
 35
 40

Tyr Cys Pro His \*
50 52

<210> 1404 <211> 90 <212> PRT <213> Homo sapiens

<400> 1404 Met Arg Val Phe Cys Val Gly Leu Leu Leu Phe Ser Val Thr Trp Ala 10 Ala Pro Thr Phe Gln Pro Gln Thr Glu Lys Thr Lys Gln Ser Cys Val 25 20 Glu Glu Gln Arg Gln Glu Glu Lys Asn Lys Asp Asn Ile Gly Phe His 40 35 His Leu Gly Lys Arg Ile Asn Gln Glu Leu Ser Ser Lys Glu Asn Ile . 60 55 Val Gln Glu Arg Lys Lys Asp Leu Ser Leu Ser Glu Ala Ser Glu Asn 70 Lys Gly Ser Ser Lys Ser Gln Asn Tyr Phe 85

<210> 1405 <211> 477 <212> PRT <213> Homo sapiens

<400> 1405 Met Ala Gly Arg Gly Gly Ser Ala Leu Leu Ala Leu Cys Gly Ala Leu 10 Ala Ala Cys Gly Trp Leu Leu Gly Ala Glu Ala Gln Glu Pro Gly Ala 20 25 Pro Ala Ala Gly Met Arg Arg Arg Arg Leu Gln Glu Asp Gly 40 Ile Ser Phe Glu Tyr His Arg Tyr Pro Glu Leu Arg Glu Ala Leu Val 60 55 Ser Val Trp Leu Gln Cys Thr Ala Ile Ser Arg Ile Tyr Thr Val Gly 70 75 Arg Ser Phe Glu Gly Arg Glu Leu Leu Val Ile Glu Leu Ser Asp Asn 90 Pro Gly Val His Glu Pro Gly Glu Pro Glu Phe Lys Tyr Ile Gly Asn 105 100 Met His Gly Asn Glu Ala Val Gly Arg Glu Leu Leu Ile Phe Leu Ala 120 Gln Tyr Leu Cys Asn Glu Tyr Gln Lys Gly Asn Glu Thr Ile Val Asn 135 140 Leu Ile His Ser Thr Arg Ile His Ile Met Pro Ser Leu Asn Pro Asp 150 155 Gly Phe Glu Lys Ala Ala Ser Gln Pro Gly Glu Leu Lys Asp Trp Phe 170 175 165 Val Gly Arg Ser Asn Ala Gln Gly Ile Asp Leu Asn Arg Asn Phe Pro 185 Asp Leu Asp Arg Ile Val Tyr Val Asn Glu Lys Glu Gly Gly Pro Asn

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200
     195
Asn His Leu Leu Lys Asn Met Lys Lys Ile Val Asp Gln Asn Thr Lys
      215
                                220
Leu Ala Pro Glu Thr Lys Ala Val Ile His Trp Ile Met Asp Ile Pro
225 230
                              235
Phe Val Leu Ser Ala Asn Leu His Gly Gly Asp Leu Val Ala Asn Tyr
           245
                          250
Pro Tyr Asp Glu Thr Arg Ser Gly Ser Ala His Glu Tyr Ser Ser Ser
                       265
                               270
        260
Pro Asp Asp Ala Ile Phe Gln Ser Leu Ala Arg Ala Tyr Ser Ser Phe
 275 280
                            285
Asn Pro Ala Met Ser Asp Pro Asn Arg Pro Pro Cys Arg Lys Asn Asp
 290 295 300
Asp Asp Ser Ser Phe Val Asp Gly Thr Thr Asn Gly Gly Ala Trp Tyr
305 310
                             315
Ser Val Pro Gly Gly Met Gln Asp Phe Asn Tyr Leu Ser Ser Asn Cys
                  330 335
          325
Phe Glu Ile Thr Val Glu Leu Ser Cys Glu Lys Phe Pro Pro Glu Glu
 340 345 350
Thr Leu Lys Thr Tyr Trp Glu Asp Asn Lys Asn Ser Leu Ile Ser Tyr
            360 365
355
Leu Glu Gln Ile His Arg Gly Val Lys Gly Phe Val Arg Asp Leu Gln
· 370 375
                                380
Gly Asn Pro Ile Ala Asn Ala Thr Ile Ser Val Glu Gly Ile Asp His
               390
                              395
Asp Val Thr Ser Ala Lys Asp Gly Asp Tyr Trp Arg Leu Leu Ile Pro
                          410 415
           405
Gly Asn Tyr Lys Leu Thr Ala Ser Ala Pro Gly Tyr Leu Ala Ile Thr
        420 425
Lys Lys Val Ala Val Pro Tyr Ser Pro Ala Ala Gly Val Asp Phe Glu
                   440
Leu Glu Ser Phe Ser Glu Arg Lys Glu Glu Glu Lys Glu Glu Leu Met
 450 . 455
                       460
Glu Trp Trp Lys Met Met Ser Glu Thr Leu Asn Phe *
      470
                              475 476
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<210> 1406 <211> 55 <212> PRT <213> Homo sapiens

<210> 1407 <211> 66 <212> PRT

## <213> Homo sapiens

<210> 1408 <211> 58 <212> PRT <213> Homo sapiens

<210> 1409 <211> 72 <212> PRT <213> Homo sapiens

<210> 1410 <211> 53 <212> PRT <213> Homo sapiens

<210> 1411 <211> 82 <212> PRT <213> Homo sapiens

<210> 1412 <211> 72 <212> PRT <213> Homo sapiens

<210> 1413 <211> 59 <212> PRT

## <213> Homo sapiens

<210> 1414 <211> 78 <212> PRT <213> Homo sapiens

<210> 1415 <211> 171 <212> PRT <213> Homo sapiens

<400> 1415 Met His Met Met Lys Leu Ser Ile Lys Val Leu Leu Gln Ser Ala Leu 10 5 Ser Leu Gly Arg Ser Leu Asp Ala Asp His Ala Pro Leu Gln Gln Phe 25 20 Phe Val Val Met Glu His Cys Leu Lys His Gly Leu Lys Val Lys Lys 40 35 Ser Phe Ile Gly Gln Asn Lys Ser Phe Phe Gly Pro Leu Glu Leu Val 55 Glu Lys Leu Cys Pro Glu Ala Ser Asp Ile Ala Thr Ser Val Arg Asn 75 70 Leu Pro Glu Leu Lys Thr Ala Val Gly Arg Gly Arg Ala Trp Leu Tyr 85 Leu Ala Leu Met Gln Lys Lys Leu Ala Asp Tyr Leu Lys Val Leu Ile 110 105 100 Asp Asn Lys His Leu Leu Ser Glu Phe Tyr Glu Pro Glu Ala Leu Met 125 . 120 Met Glu Glu Gly Met Val Ile Val Gly Leu Leu Val Gly Leu Asn

<210> 1416 <211> 77 <212> PRT <213> Homo sapiens

<210> 1417 <211> 249 <212> PRT <213> Homo sapiens

70

<400> 1417 Met Glu Lys Ile Pro Glu Ile Gly Lys Phe Gly Glu Lys Ala Pro Pro 10 Ala Pro Ser His Val Trp Arg Pro Ala Ala Leu Phe.Leu Thr Leu Leu Cys Leu Leu Leu Ile Gly Leu Gly Val Leu Ala Ser Met Phe His 40 Val Thr Leu Lys Ile Glu Met Lys Lys Met Asn Lys Leu Gln Asn Ile 55 60 Ser Glu Glu Leu Gln Arg Asn Ile Ser Leu Gln Leu Met Ser Asn Met 70 Asn Ile Ser Asn Lys Ile Arg Asn Leu Ser Thr Thr Leu Gln Thr Ile 90 Ala Thr Lys Leu Cys Arg Glu Leu Tyr Ser Lys Glu Gln Glu His Lys · 100 105 Cys Lys Pro Cys Pro Arg Arg Trp Ile Trp His Lys Asp Ser Cys Tyr 120 125 Phe Leu Ser Asp Asp Val Gln Thr Trp Gln Glu Ser Lys Met Ala Cys 135 Ala Ala Gln Asn Ala Ser Leu Leu Lys Ile Asn Asn Lys Asn Ala Leu 150 155 Glu Phe Ile Lys Ser Gln Ser Arg Ser Tyr Asp Tyr Trp Leu Gly Leu 170 Ser Pro Glu Glu Asp Ser Thr Arg Gly Met Arg Val Asp Asn Ile Ile 185

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Asn Ser Ser Ala Trp Val Ile Arg Asn Ala Pro Asp Leu Asn Asn Met

195 - 200 - 205 - 205

Tyr Cys Gly Tyr Ile Asn Arg Leu Tyr Val Gln Tyr Tyr His Cys Thr

210 - 215 - 225

Tyr Lys Gln Arg Met Ile Cys Glu Lys Met Ala Asn Pro Val Gln Leu

225 - 230 - 240

Gly Ser Thr Tyr Phe Arg Glu Ala \* 248

<210> 1418 <211> 65 <212> PRT <213> Homo sapiens

 <400> 1418

 Met
 Gly
 Leu
 Lys
 Asn
 Val
 Phe
 Leu
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 Val
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<210> 1419 <211> 468 <212> PRT <213> Homo sapiens

<400> 1419 Met Leu Leu Leu Leu Leu Pro Leu Trp Gly Arg Glu Arg Val 10 5 Glu Gly Gln Lys Ser Asn Arg Lys Asp Tyr Ser Leu Thr Met Gln Ser 25 20 Ser Val Thr Val Gln Glu Gly Met Cys Val His Val Arg Cys Ser Phe 45 40 Ser Tyr Pro Val Asp Ser Gln Thr Asp Ser Asp Pro Val His Gly Tyr 60 55 50 Trp Phe Arg Ala Gly Asn Asp Ile Ser Trp Lys Ala Pro Val Ala Thr 70 65 Asn Asn Pro Ala Trp Ala Val Gln Glu Glu Thr Arg Asp Arg Phe His 85 Leu Leu Gly Asp Pro Gln Thr Lys Asn Cys Thr Leu Ser Ile Arg Asp 105 100 Ala Arg Met Ser Asp Ala Gly Arg Tyr Phe Phe Arg Met Glu Lys Gly 125 120 Asn Ile Lys Trp Asn Tyr Lys Tyr Asp Gln Leu Ser Val Asn Val Thr 140 135 Ala Leu Thr His Arg Pro Asn Ile Leu Ile Pro Gly Thr Leu Glu Ser 155 150 Gly Cys Phe Gln Asn Leu Thr Cys Ser Val Pro Trp Ala Cys Glu Gln

170 . 165 Gly Thr Pro Pro Met Ile Ser Trp Met Gly Thr Ser Val Ser Pro Leu 185 180 His Pro Ser Thr Thr Arg Ser Ser Val Leu Thr Leu Ile Pro Gln Pro 200 205 Gln His His Gly Thr Ser Leu Thr Cys Gln Val Thr Leu Pro Gly Ala 215 220 Gly Val Thr Thr Asn Arg Thr Ile Gln Leu Asn Val Ser Tyr Pro Pro 230 235 Gln Asn Leu Thr Val Thr Val Phe Gln Gly Glu Gly Thr Ala Ser Thr 245 250 Ala Leu Gly Asn Ser Ser Ser Leu Ser Val Leu Glu Gly Gln Ser Leu 260 265 270 Arg Leu Val Cys Ala Val Asp Ser Asn Pro Pro Ala Arg Leu Ser Trp 280 285 Thr Trp Arg Ser Leu Thr Leu Tyr Pro Ser Gln Pro Ser Asn Pro Leu 295 Val Leu Glu Leu Gln Val His Leu Gly Asp Glu Gly Glu Phe Thr Cys 310 315 Arg Ala Gln Asn Ser Leu Gly Ser Gln His Val Ser Leu Asn Leu Ser 330 325 Leu Gln Gln Glu Tyr Thr Gly Lys Met Arg Pro Val Ser Gly Val Leu 345 350 Leu Gly Ala Val Gly Gly Ala Gly Ala Thr Ala Leu Val Phe Leu Ser 360 Phe Cys Val Ile Phe Ile Val Val Arg Ser Cys Arg Lys Lys Ser Ala 370 375 380 Arg Pro Ala Ala Asp Val Gly Asp Ile Gly Met Lys Asp Ala Asn Thr 390 395 Ile Arg Gly Ser Ala Ser Gln Gly Asn Leu Thr Glu Ser Trp Ala Asp 405 410 Asp Asn Pro Arg His His Gly Leu Ala Ala His Ser Ser Gly Glu Glu 420 425 Arg Glu Ile Gln Tyr Ala Pro Leu Ser Phe His Lys Gly Glu Pro Gln 440 445 Asp Leu Ser Gly Gln Glu Ala Thr Asn Asn Glu Tyr Ser Glu Ile Lys Ile Pro Lys \* 465 467

<210> 1420 <211> 150 <212> PRT <213> Homo sapiens

<400> 1420

<210> 1421 <211> 89 <212> PRT <213> Homo sapiens

<400> 1421 Met Tyr Val Phe Leu Leu Cys Pro Ala Cys Gly Arg Leu Met Gly Ser 10 Thr Tyr Met Arg Leu Leu Pro Gln Ser Glu Pro Ala Leu His Asn Arg 25 20 Ile Leu Arg Gln Thr Glu Pro Leu Leu Tyr Phe Lys Arg Gly Lys Gln 40 Gln Gly Leu Phe Tyr Ala Ser Phe Pro Ala Val His Arg Met Asp Ser 60 55 Leu Leu Arg Arg Thr Val Val Ile Leu Tyr Lys Arg Thr Asn Thr Val 75 70 Gly Val Ser Leu Phe Gln Asn Ala 85

<210> 1422 <211> 83 <212> PRT <213> Homo sapiens

 <400> 1422

 Met
 Met
 Thr
 Trp
 Ala
 Ser
 Leu
 Ala
 Leu
 Gly
 Leu
 Thr
 Arg
 Ala
 Leu
 Gly

 Gly
 Met
 Gly
 Ser
 Phe
 Leu
 Leu
 Arg
 Ile
 Leu
 Gly
 Trp
 Arg
 Trp
 Arg
 Gly
 Arg
 Leu
 Gly
 Phe
 Thr

 Gly
 Ser
 Arg
 Arg
 Ala
 Arg
 Trp
 Pro
 Arg
 Gly
 Arg
 Leu
 Gly
 Phe
 Thr

 Ser
 Met
 Leu
 Ser
 Arg
 Gln
 Cys
 Ser
 Val
 Cys
 Arg
 Met
 Ile
 Met

 Ser
 Leu
 Val
 Glu
 Val
 Leu
 Val
 Ala
 Trp
 Trp
 Arg
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 Val
 Leu
 Trp

 Ser
 Leu
 Val
 Glu
 Val
 Ala
 Trp
 Arg
 Full
 Full
 Full
 Full
 Full
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 Full
 Full

<210> 1423 <211> 54

<212> PRT <213> Homo sapiens

<400> 1423

 Met Ile Leu Phe Phe Pro Leu Cys
 Pro Ser Ile Leu Ser Leu Lys
 Pro Lys

 1
 5
 5
 10
 15

 Lys Lys Glu Ala Leu Pro Ser Leu Ser Val Met Gly Thr Val Phe Leu 25
 30

 Leu Val Ser Cys Ser Leu Pro Ser Pro Ala Ala Cys Gly Arg Asn Ala 35
 40
 45

 Ala Thr Ala Gln His 50
 53

<210> 1424 <211> 73 <212> PRT <213> Homo sapiens

<400> 1424

<210> 1425 <211> 245 <212> PRT <213> Homo sapiens

<400> 1425

Met Ala Cys Tyr Leu Leu Val Ala Asn Ile Leu Leu Val Asn Leu Leu 5 10 Ile Ala Val Phe Asn Asn Thr Phe Phe Glu Val Lys Ser Ile Ser Asn 20 25 Gln Val Trp Lys Phe Gln Arg Tyr Gln Leu Ile Met Thr Phe His Glu 40 45 Arg Pro Val Leu Pro Pro Leu Ile Ile Phe Ser His Met Thr Met 55 Ile Phe Gln His Leu Cys Cys Arg Trp Arg Lys His Glu Ser Asp Pro 70 75 Asp Glu Arg Asp Tyr Gly Leu Lys Leu Phe Ile Thr Asp Asp Glu Leu 85 90 Lys Lys Val His Asp Phe Glu Glu Gln Cys Ile Glu Glu Tyr Phe Arg 100 . 105 110 Glu Lys Asp Asp Arg Phe Asn Ser Ser Asn Asp Glu Arg Ile Arg Val 120

Thr Ser Glu Arg Val Glu Asn Met Ser Met Arg Leu Glu Glu Val Asn 135 Glu Arg Glu His Ser Met Lys Ala Ser Leu Gln Thr Val Asp Ile Arg 150 155 Leu Ala Gln Leu Glu Asp Leu Ile Gly Arg Met Ala Thr Ala Leu Glu 170 165 Arg Leu Thr Gly Leu Glu Arg Ala Glu Ser Asn Lys Ile Arg Ser Arg 185 190 180 Thr Ser Ser Asp Cys Thr Asp Ala Arg Leu His Trp Pro Val Arg Ala 200 205 Ala Leu Thr Ser Gln Glu Arg Glu His Leu Ser Ala Pro Lys Arg Gly 215 220 Leu Glu Pro Trp Gln Asn Ile Leu Phe Ile Gln Tyr Lys Pro Ala Ala 235 230 Ser Ser Ser Thr \* 244

<210> 1426 <211> 520 <212> PRT <213> Homo sapiens <221> misc\_feature

<222> (1)...(520) <223> Xaa = any amino acid or nothing

<400> 1426 Met Asp Ile Leu Leu Leu Leu Phe Phe Met Ile Ile Phe Ala Ile 10 Leu Gly Phe Tyr Leu Phe Ser Pro Asn Pro Ser Asp Pro Tyr Phe Ser 20 Thr Leu Glu Asn Ser Ile Val Ser Leu Phe Val Leu Leu Thr Thr Ala 40 Asn Phe Pro Asp Val Met Met Pro Ser Tyr Ser Arg Asn Pro Trp Ser 55 60 Cys Val Phe Phe Ile Val Tyr Leu Ser Ile Glu Leu Tyr Phe Ile Met 65 70 75 Asn Leu Leu Leu Ala Val Val Phe Asp Thr Phe Asn Asp Ile Glu Lys 90 85 Arg Lys Phe Lys Ser Leu Leu Leu His Lys Arg Thr Ala Ile Gln His 100 105 Ala Tyr Arg Leu Leu Ile Ser Gln Arg Arg Pro Ala Gly Ile Ser Tyr 120 125 115 Arg Gln Phe Glu Gly Leu Met Arg Phe Tyr Lys Pro Arg Met Ser Ala 130 135 140 Arg Glu Arg Tyr Leu Thr Phe Lys Ala Leu Asn Gln Asn Asn Thr Pro 150 155 Leu Leu Ser Leu Lys Asp Phe Tyr Asp Ile Tyr Glu Val Ala Ala Leu 165 170 Lys Trp Lys Ala Thr Lys Asn Arg Glu His Trp Val Asp Glu Leu Pro 185 190 Arg Thr Ala Leu Leu Ile Phe Lys Gly Ile Asn Ile Leu Val Lys Ala 200 205 Lys Ala Phe Gln Tyr Phe Met Tyr Leu Val Val Ala Val Asn Gly Val 215 220 Trp Ile Leu Val Glu Thr Phe Met Leu Lys Gly Gly Asn Phe Phe Ser

230 235 Lys His Val Pro Trp Ser Tyr Leu Val Phe Leu Thr Ile Tyr Gly Val 245 250 Glu Leu Phe Leu Lys Val Ala Gly Leu Gly Pro Val Glu Tyr Leu Ser 265 Ser Gly Trp Asn Leu Phe Asp Phe Ser Val Thr Val Phe Ala Phe Leu 280 Gly Leu Leu Ala Leu Ala Leu Asn Met Glu Pro Phe Tyr Phe Ile Val 295 300 Val Leu Arg Pro Leu Gln Leu Leu Arg Leu Phe Lys Leu Lys Glu Arg 305 - 310 315 Tyr Arg Asn Val Leu Asp Thr Met Phe Glu Leu Leu Pro Arg Met Ala 325 330 Ser Leu Gly Leu Thr Leu Leu Ile Phe Tyr Tyr Ser Phe Ala Ile Val 340 345 Gly Met Glu Phe Phe Cys Gly Ile Val Phe Pro Asn Cys Cys Asn Thr 360 Ser Thr Val Ala Asp Ala Tyr Arg Trp Arg Asn His Thr Val Gly Asn 375 380 Arg Thr Val Val Glu Glu Gly Tyr Tyr Tyr Leu Asn Asn Phe Asp Asn 390 395 Ile Leu Asn Ser Phe Val Thr Leu Phe Glu Leu Thr Val Val Asn Asn 405 410 Trp Tyr Ile Ile Met Glu Gly Val Thr Ser Gln Thr Ser His Trp Ser 420 425 Arg Leu Tyr Phe Met Thr Phe Tyr Ile Ala Thr Met Val Val Met Thr 435 440 445 Ile Ile Val Ala Phe Ile Leu Glu Ala Phe Val Phe Arg Met Asn Tyr 455 460 Ser Arg Lys Asn Gln Asp Ser Glu Val Asp Gly Gly Ile Thr Leu Glu 470 475 Lys Glu Ile Ser Lys Glu Glu Leu Val Ala Val Leu Glu Leu Tyr Arg 485 490 Glu Ala Arg Xaa Ala Ser Ser Asp Val Thr Arg Leu Leu Glu Thr Leu 505 Ser Gln Met Glu Arg Tyr Gln Gln

<210> 1427 <211> 106 <212> PRT <213> Homo sapiens

<400> 1427

 Met
 Ser
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 Leu
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Thr Thr His Arg Leu Pro Ser Cys Phe \* 100 105

<210> 1428 <211> 841 <212> PRT <213> Homo sapiens

<400> 1428 Met Ala Leu Ala Ser Ala Ala Pro Gly Ser Ile Phe Cys Lys Gln Leu 10 Leu Phe Ser Leu Leu Val Leu Thr Leu Leu Cys Asp Ala Cys Gln Lys 25 Val Tyr Leu Arg Val Pro Ser His Leu Gln Ala Glu Thr Leu Val Gly 40 Lys Val Asn Leu Glu Glu Cys Leu Lys Ser Ala Ser Leu Ile Arg Ser 55 60 Ser Asp Pro Ala Phe Arg Ile Leu Glu Asp Gly Ser Ile Tyr Thr Thr 70 75 His Asp Leu Ile Leu Ser Ser Glu Arg Lys Ser Phe Ser Ile Phe Leu 90 Ser Asp Gly Gln Arg Arg Glu Gln Glu Ile Lys Val Val Leu Ser 100 105 Ala Arg Glu Asn Lys Ser Pro Lys Lys Arg His Thr Lys Asp Thr Ala 120 125 Leu Lys Arg Ser Lys Arg Arg Trp Ala Pro Ile Pro Ala Ser Leu Met 135 140 Glu Asn Ser Leu Gly Pro Phe Pro Gln His Val Gln Gln Ile Gln Ser 150 155 Asp Ala Ala Gln Asn Tyr Thr Ile Phe Tyr Ser Ile Ser Gly Pro Gly 165 170 Val Asp Lys Glu Pro Phe Asn Leu Phe Tyr Ile Glu Lys Asp Thr Gly 180 185 190 Asp Ile Phe Cys Thr Arg Ser Ile Asp Arg Glu Lys Tyr Glu Gln Phe 200 195 205 Ala Leu Tyr Gly Tyr Ala Thr Thr Ala Asp Gly Tyr Ala Pro Glu Tyr 215 220 Pro Leu Pro Leu Ile Ile Lys Ile Glu Asp Asp Asn Asp Asn Ala Pro 230 235 Tyr Phe Glu His Arg Val Thr Ile Phe Thr Val Pro Glu Asn Cys Arg 245 250 Ser Gly Thr Ser Val Gly Lys Val Thr Ala Thr Asp Leu Asp Glu Pro 265 Asp Thr Leu His Thr Arg Leu Lys Tyr Lys Ile Leu Gln Gln Ile Pro 280 Asp His Pro Lys His Phe Ser Ile His Pro Asp Thr Gly Val Ile Thr 295 300 Thr Thr Thr Pro Phe Leu Asp Arg Glu Lys Cys Asp Thr Tyr Gln Leu 310 315 Ile Met Glu Val Arg Asp Met Gly Gly Gln Pro Phe Gly Leu Phe Asn 325 330 Thr Gly Thr Ile Thr Ile Ser Leu Glu Asp Glu Asn Asp Asn Pro Pro 340 345 Ser Phe Thr Glu Thr Ser Tyr Val Thr Glu Val Glu Glu Asn Arg Ile 360 Asp Val Glu Ile Leu Arg Met Lys Val Gln Asp Gln Asp Leu Pro Asn

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375
                                          380
Thr Pro His Ser Lys Ala Val Tyr Lys Ile Leu Gln Gly Asn Glu Asn
                 390
                                      395
Gly Asn Phe Ile Ile Ser Thr Asp Pro Asn Thr Asn Glu Gly Val Leu
              405
                                  410
Cys Val Val Lys Pro Leu Asn Tyr Glu Val Asn Arg Gln Val Ile Leu
           420
                             425
Gln Val Gly Val Ile Asn Glu Ala Gln Phe Ser Lys Ala Ala Ser Ser
                          440
                                             445
Gln Thr Pro Thr Met Cys Thr Thr Thr Val Thr Val Lys Ile Ile Asp
                                   . 460
                      455
Ser Asp Glu Gly Pro Glu Cys His Pro Pro Val Lys Val Ile Gln Ser
         470
                                      475
Gln Asp Gly Phe Pro Ala Gly Gln Glu Leu Leu Gly Tyr Lys Ala Leu
            485
                                  490
Asp Pro Glu Ile Ser Ser Gly Glu Gly Leu Arg Tyr Gln Lys Leu Gly
          500
                              505
Asp Glu Asp Asn Trp Phe Glu Ile Asn Gln His Thr Gly Asp Leu Arg
                          520
                                             525
Thr Leu Lys Val Leu Asp Arg Glu Ser Lys Phe Val Lys Asn Asn Gln
                     535
                                         540
Tyr Asn Ile Ser Val Val Ala Gly Asp Ala Val Gly Arg Ser Cys Thr
        550
                                     555
Gly Thr Leu Val Val His Leu Asp Asp Tyr Asn Asp His Ala Pro Gln
              565
                                 570
Ile Asp Lys Glu Val Thr Ile Cys Gln Asn Asn Glu Asp Phe Val Val
                             585
                                                 590
Leu Lys Pro Val Asp Pro Asp Gly Pro Glu Asn Gly Pro Pro Phe Gln
                          600
                                              605
Phe Phe Leu Asp Asn Ser Ala Ser Lys Asn Trp Asn Ile Lys Lys
                      615
                                          620
Asp Gly Lys Thr Ala Ile Leu Arg Gln Arg Gln Asn Leu Asp Tyr Asn
                  630
                                      635
Tyr Tyr Ser Val Pro Ile Gln Ile Lys Asp Arg His Gly Leu Val Ala
                                  650
Thr His Met Leu Thr Val Arg Val Cys Asp Cys Ser Thr Pro Ser Glu
           660
                              665
Cys Thr Met Lys Asp Lys Ser Thr Arg Asp Val Arg Pro Asn Val Ile
                          680
                                              685
Leu Gly Arg Trp Ala Ile Leu Ala Met Val Leu Gly Ser Val Leu Leu
                      695
                                          700
Leu Cys Ile Leu Phe Thr Cys Phe Cys Val Thr Ala Lys Arg Thr Val
                  710
                                      715
Lys Lys Cys Phe Pro Glu Asp Ile Ala Gln Gln Asn Leu Ile Val Ser
              725
                                  730
Asn Thr Glu Gly Pro Gly Glu Glu Val Thr Glu Ala Asn Ile Arg Leu
          740
                              745
Pro Met Gln Thr Ser Asn Ile Cys Asp Thr Ser Met Ser Val Gly Thr
                          760
Val Gly Gly Gln Gly Ile Lys Thr Gln Gln Ser Phe Glu Met Val Lys
                     775
                                         780
Gly Gly Tyr Thr Leu Asp Ser Asn Lys Gly Gly Gly His Gln Thr Leu
                                     795
Glu Ser Val Lys Gly Val Gly Gln Gly Asp Thr Gly Arg Tyr Ala Tyr
              805
                                 810
Thr Asp Trp Gln Ser Phe Thr Gln Pro Arg Leu Gly Glu Glu Ser Ile
          820
                             825
Arg Gly His Thr Leu Ile Lys Asn *
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<210> 1429 <211> 262 <212> PRT <213> Homo sapiens

<400> 1429 Met Glu Leu Leu Gln Val Thr Ile Leu Phe Leu Leu Pro Ser Ile Cys 10 Ser Ser Asn Ser Thr Gly Val Leu Glu Ala Ala Asn Asn Ser Leu Val 25 Val Thr Thr Lys Pro Ser Ile Thr Thr Pro Asn Thr Glu Ser Leu 40 Gln Lys Asn Val Val Thr Pro Thr Thr Gly Thr Thr Pro Lys Gly Thr 55 60 Ile Thr Asn Glu Leu Leu Lys Met Ser Leu Met Ser Thr Ala Thr Phe 70 75 Leu Thr Ser Lys Asp Glu Gly Leu Lys Ala Thr Thr Thr Asp Val Arg 90 85 Lys Asn Asp Ser Ile Ile Ser Asn Val Thr Val Thr Ser Val Thr Leu 100 105 110 Pro Asn Ala Val Ser Thr Leu Gln Ser Ser Lys Pro Lys Thr Glu Thr 125 120 Gln Ser Ser Ile Lys Thr Thr Glu Ile Pro Gly Ser Val Leu Gln Pro 135 140 Asp Ala Ser Pro Ser Lys Thr Gly Thr Leu Thr Ser Ile Pro Val Thr 155 160 150 Ile Pro Glu Asn Thr Ser Gln Ser Gln Val Ile Gly Thr Glu Gly Gly 165 170 175 Lys Asn Ala Ser Thr Ser Ala Thr Ser Arg Ser Tyr Ser Ser Ile Ile 180 185 Leu Pro Val Val Ile Ala Leu Ile Val Ile Thr Leu Ser Val Phe Val 195 200 Leu Val Gly Leu Tyr Arg Met Cys Trp Lys Ala Asp Pro Gly Thr Pro 215 Glu Asn Gly Asn Asp Gln Pro Gln Ser Asp Lys Glu Ser Val Lys Leu 230 235 Leu Thr Val Lys Thr Ile Ser His Glu Ser Gly Glu His Ser Ala Gln 245 250 Gly Lys Thr Lys Asn \* 260 261

<210> 1430 <211> 66 <212> PRT <213> Homo sapiens

35 40 45

Gln Asn Pro Asn Asn Val Leu Ile Phe Leu Gln Lys Trp Lys Asn Arg
50 55 60

Cys \*
65

<210> 1431 <211> 437 <212> PRT <213> Homo sapiens

<400> 1431 Met Leu Lys Val Ser Ala Val Leu Cys Val Cys Ala Ala Ala Trp Cys Ser Gln Ser Leu Ala Ala Ala Ala Ala Val Ala Ala Ala Gly Gly Arg 20 25 Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu Thr Thr Ile 40 Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys Phe Arg Asp Glu 55 Val Glu Asp Asp Tyr Phe Arg Thr Trp Ser Pro Gly Lys Pro Phe Asp 70 Gln Ala Leu Asp Pro Ala Lys Asp Pro Cys Leu Lys Met Lys Cys Ser 85 90 Arg His Lys Val Cys Ile Ala Gln Asp Ser Gln Thr Ala Val Cys Ile 105 Ser His Arg Arg Leu Thr His Arg Met Lys Glu Ala Gly Val Asp His 120 125 Arg Gln Trp Arg Gly Pro Ile Leu Ser Thr Cys Lys Gln Cys Pro Val 135 Val Tyr Pro Ser Pro Val Cys Gly Ser Asp Gly His Thr Tyr Ser Phe 150 155 Gln Cys Lys Leu Glu Tyr Gln Ala Cys Val Leu Gly Lys Gln Ile Ser 170 Val Lys Cys Glu Gly His Cys Pro Cys Pro Ser Asp Lys Pro Thr Ser 185 Thr Ser Arg Asn Val Lys Arg Ala Cys Ser Asp Leu Glu Phe Arg Glu 200 205 Val Ala Asn Arg Leu Arg Asp Trp Phe Lys Ala Leu His Glu Ser Gly 215 220 Ser Gln Asn Lys Lys Thr Lys Thr Leu Leu Arg Pro Glu Arg Ser Arg 230 235 Phe Asp Thr Ser Ile Leu Pro Ile Cys Lys Asp Ser Leu Gly Trp Met 245 250 Phe Asn Arg Leu Asp Thr Asn Tyr Asp Leu Leu Leu Asp Gln Ser Glu 260 265 Leu Arg Ser Ile Tyr Leu Asp Lys Asn Glu Gln Cys Thr Lys Ala Phe 280 285 Phe Asn Ser Cys Asp Thr Tyr Lys Asp Ser Leu Ile Ser Asn Asn Glu 295 300 Trp Cys Tyr Cys Phe Gln Arg Gln Gln Asp Pro Pro Cys Gln Thr Glu 310 315 Leu Ser Asn Ile Gln Lys Arg Gln Gly Val Lys Lys Leu Leu Gly Gln 325 330 Tyr Ile Pro Leu Cys Asp Glu Asp Gly Tyr Tyr Lys Pro Thr Gln Cys

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His Gly Ser Val Gly Gln Cys Trp Cys Val Asp Arg Tyr Gly Asn Glu 355

Val Met Gly Ser Arg Ile Asn Gly Val Ala Asp Cys Ala Ile Asp Phe 370

Glu Ile Ser Gly Asp Phe Ala Ser Gly Asp Phe His Glu Trp Thr Asp 385

Asp Glu Asp Asp Glu Asp Asp Asp Ile Met Asn Asp Glu Asp Glu Ile Glu 415

Asp Asp Asp Asp Glu Asp Glu Gly Asp Asp Asp Asp Asp Asp Asp Asp His 420

Asp Val Tyr Ile * 435

Asp Val Tyr Ile * 435
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<210> 1432 <211> 53 <212> PRT <213> Homo sapiens

<210> 1433 <211> 76 <212> PRT <213> Homo sapiens

<210> 1434 <211> 169 <212> PRT <213> Homo sapiens

<400> 1434 Met Glu Ser Trp Trp Gly Leu Pro Cys Leu Ala Phe Leu Cys Phe Leu 10 Met His Ala Arg Gly Gln Arg Asp Phe Asp Leu Ala Asp Ala Leu Asp 20 25 Asp Pro Glu Pro Thr Lys Lys Pro Asn Ser Asp Ile Tyr Pro Lys Pro 40 45 Lys Pro Pro Tyr Tyr Pro Gln Pro Glu Asn Pro Asp Ser Gly Gly Asn 55 60 Ile Tyr Pro Arg Pro Lys Pro Arg Pro Gln Pro Gln Pro Gly Asn Ser 75 Gly Asn Ser Gly Gly Ser Tyr Phe Asn Asp Val Asp Arg Asp Asp Gly Arg Tyr Pro Pro Arg Pro Arg Pro Arg Pro Pro Ala Gly Gly Gly 100 105 Gly Gly Tyr Ser Ser Tyr Gly Asn Ser Asp Asn Thr His Gly Gly Asp 120 125 His His Ser Thr Tyr Gly Asn Pro Glu Gly Asn Met Val Ala Lys Ile 135 140 Val Ser Pro Ile Val Ser Val Val Val Thr Leu Leu Gly Ala Ala 150 155 Ala Gln Leu Phe Gln Thr Lys Gln \* 165

<210> 1435 <211> 162 <212> PRT <213> Homo sapiens

<400> 1435 Met Arg Phe Val Thr Leu Ser Ser Ala Cys Leu Cys Pro Cys Pro Leu 10 Gly Pro Cys Trp Thr Arg His Pro Ser Tyr Gly Asn Leu His Glu Ala 20 25 Ser Thr Ser Leu Pro Pro Arg His Trp Thr Gly Ala Arg Lys Trp Asn 40 Glu Ser Ser His Cys Leu Lys Ser Trp Arg Pro Ser Ser Ala Ser Gly 60 Ser Pro Glu Asn Leu Gly Ser Asp Arg Arg Thr Glu Thr Glu Gly Arg Glu Arg Asp Cys Asp Arg Glu Ala Glu Glu Gly Asp Arg Val Arg Glu 85 90 Glu Gln Asn Ser Leu Gln Trp Glu Gln Arg Gln Lys Cys Gly Gly Pro 105 100 Thr Gly Arg Gly Gly Arg Glu Gly Glu Gly Arg Arg Glu Gly Gln Leu 120 125 Pro Val Gln Val Ala Val Arg Ala Leu Gly Leu Gly Arg Gly Thr Leu 135 140 Leu Leu Ala Ser His Thr Gly Ser Ile Arg Gly Pro Arg Glu Gln 150 Val Ser 162

<210> 1436

<211> 77 <212> PRT <213> Homo sapiens

<210> 1437 <211> 85 <212> PRT <213> Homo sapiens

<400> 1437 Met Cys Ser Leu Pro Arg His Leu Leu Phe Leu Ile Ile Phe Arg Ala 10 Tyr Ser Leu Ala Val Asp Leu Ser Thr His Ser Leu Thr Thr Ala Lys 20 25 Phe Pro Ser Pro Ile Val Leu Pro Thr Leu Tyr Arg Ser Val Ile Val 35 40 45 Ala Gly Ile Trp Lys Pro Ser Ser Asp Thr Ser Ser Pro Gly Pro Ser 60 Phe Ser Ser Ile Glu Leu Gln Thr Leu Val Asp Ala Ser Asp Val Glu 75 Glu Pro Pro Cys 84

<210> 1438 <211> 76 <212> PRT <213> Homo sapiens

<210> 1439 <211> 425 <212> PRT <213> Homo sapiens

<400> 1439 Met Ser Leu Thr Ile Trp Thr Val Cys Gly Val Leu Ser Leu Phe Gly 10 Ala Leu Ser Tyr Ala Glu Leu Gly Thr Thr Ile Lys Lys Ser Gly Gly 20 25 His Tyr Thr Tyr Ile Leu Glu Val Phe Gly Pro Leu Pro Ala Phe Val 40 Arg Val Trp Val Glu Leu Leu Ile Ile Arg Pro Ala Ala Thr Ala Val 55 60 Ile Ser Leu Ala Phe Gly Arg Tyr Ile Leu Glu Pro Phe Phe Ile Gln 70 75 Cys Glu Ile Pro Glu Leu Ala Ile Lys Leu Ile Thr Ala Val Gly Ile 85 90 Thr Val Val Met Val Leu Asn Ser Met Ser Val Ser Trp Ser Ala Arg 105 100 110 Ile Gln Ile Phe Leu Thr Phe Cys Lys Leu Thr Ala Ile Leu Ile Ile 125 120 Ile Val Pro Gly Val Met Gln Leu Ile Lys Gly Gln Thr Gln Asn Phe 135 Lys Asp Ala Phe Ser Gly Arg Asp Ser Ser Ile Thr Arg Leu Pro Leu 150 155 Ala Phe Tyr Tyr Gly Met Tyr Ala Tyr Ala Gly Trp Phe Tyr Leu Asn 165 170 Phe Val Thr Glu Glu Val Glu Asn Pro Glu Lys Thr Ile Pro Leu Ala 185 Ile Cys Ile Ser Met Ala Ile Val Thr Ile Gly Tyr Val Leu Thr Asn 195 200 205 Val Ala Tyr Phe Thr Thr Ile Asn Ala Glu Glu Leu Leu Ser Asn 215 220 Ala Val Ala Val Thr Phe Ser Glu Arg Leu Leu Gly Asn Phe Ser Leu 230 235 Ala Val Pro Ile Phe Val Ala Leu Ser Cys Phe Gly Ser Met Asn Gly 250 Gly Val Phe Ala Val Ser Arg Leu Phe Tyr Val Ala Ser Arg Glu Gly 260 265 His Leu Pro Glu Ile Leu Ser Met Ile His Val Arg Lys His Thr Pro 280 285 Leu Pro Ala Val Ile Val Leu His Pro Leu Thr Met Ile Met Leu Phe 295 300 Ser Gly Asp Leu Asp Ser Leu Leu Asn Phe Leu Ser Phe Ala Arg Trp 310 315 Leu Phe Ile Gly Leu Ala Val Ala Gly Leu Ile Tyr Leu Arg Tyr Lys 325 330 Cys Pro Asp Met His Arg Pro Phe Lys Val Pro Leu Phe Ile Pro Ala 340 345 Leu Phe Ser Phe Thr Cys Leu Phe Met Val Ala Leu Ser Leu Tyr Ser 360 Asp Pro Phe Ser Thr Gly Ile Gly Phe Val Ile Thr Leu Thr Gly Val 375 380 Pro Ala Tyr Tyr Leu Phe Ile Ile Trp Asp Lys Lys Pro Arg Trp Phe 390 395

 Arg Ile Met Ser Glu Lys Ile Thr Arg Thr Leu Gln Ile Ile Leu Glu

 Val Val Pro Glu Glu Asp Lys Leu \*

 420

<210> 1440 <211> 70 <212> PRT <213> Homo sapiens

<210> 1441 <211> 1691 <212> PRT <213> Homo sapiens

<400> 1441 Met Trp Ser Leu His Ile Val Leu Met Arg Cys Ser Phe Arg Leu Thr 10 Lys Ser Leu Ala Thr Gly Pro Trp Ser Leu Ile Leu Ile Leu Phe Ser Val Gln Tyr Val Tyr Gly Ser Gly Lys Lys Tyr Ile Gly Pro Cys Gly Gly Arg Asp Cys Ser Val Cys His Cys Val Pro Glu Lys Gly Ser Arg 55 Gly Pro Pro Gly Pro Gly Pro Gln Gly Pro Ile Gly Pro Leu Gly 70 75 Ala Pro Gly Pro Ile Gly Leu Ser Gly Glu Lys Gly Met Arg Gly Asp 90 Arg Gly Pro Pro Gly Ala Ala Gly Asp Lys Gly Asp Lys Gly Pro Thr. 100 105 Gly Val Pro Gly Phe Pro Gly Leu Asp Gly Ile Pro Gly His Pro Gly 120 Pro Pro Gly Pro. Arg Gly Lys Pro Gly Met Ser Gly His Asn Gly Ser 135 140 Arg Gly Asp Pro Gly Phe Pro Gly Gly Arg Gly Ala Leu Gly Pro Gly 150 155 Gly Pro Leu Gly His Pro Gly Glu Lys Gly Glu Lys Gly Asn Ser Val 170 Phe Ile Leu Gly Ala Val Lys Gly Ile Gln Gly Asp Arg Gly Asp Pro 185 Gly Leu Pro Gly Leu Pro Gly Ser Trp Gly Ala Gly Gly Pro Ala Gly

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200
Pro Thr Gly Tyr Pro Gly Glu Pro Gly Leu Val Gly Pro Pro Gly Gln
                      215
Pro Gly Arg Pro Gly Leu Lys Gly Asn Pro Gly Val Gly Val Lys Gly
                   230
                                      235
Gln Met Gly Asp Pro Gly Glu Val Gly Gln Gln Gly Ser Pro Gly Pro
                                  250 . 255
               245
Thr Leu Leu Val Glu Pro Pro Asp Phe Cys Leu Tyr Lys Gly Glu Lys
                              265
Gly Ile Lys Gly Ile Pro Gly Met Val Gly Leu Pro Gly Pro Pro Gly
                                              285
Arg Lys Gly Glu Ser Gly Ile Gly Ala Lys Gly Glu Lys Gly Ile Pro
                     295
                                        300
Gly Phe Pro Gly Pro Arg Gly Asp Pro Gly Ser Tyr Gly Ser Pro Gly
                  310
                                     315
Phe Pro Gly Leu Lys Gly Glu Leu Gly Leu Val Gly Asp Pro Gly Leu
                                 330
               325
Phe Gly Leu Ile Gly Pro Lys Gly Asp Pro Gly Asn Arg Gly His Pro
                              345
Gly Pro Pro Gly Val Leu Val Thr Pro Pro Leu Pro Leu Lys Gly Pro
                           360
Pro Gly Asp Pro Gly Phe Pro Gly Arg Tyr Gly Glu Thr Gly Asp Val
                    375
                                         380
Gly Pro Pro Gly Pro Pro Gly Leu Leu Gly Arg Pro Gly Glu Ala Cys
                                     395
                390
Ala Gly Met Ile Gly Pro Pro Gly Pro Gln Gly Phe Pro Gly Leu Pro
              405
                                 410
Gly Leu Pro Gly Glu Ala Gly Ile Pro Gly Arg Pro Asp Ser Ala Pro
          420
                             425
Gly Lys Pro Gly Lys Pro Gly Ser Pro Gly Leu Pro Gly Ala Pro Gly
                          440
                                             445
Leu Gln Gly Leu Pro Gly Ser Ser Val Ile Tyr Cys Ser Val Gly Asn
                       455
                                         460
Pro Gly Pro Gln Gly Ile Lys Gly Lys Val Gly Pro Pro Gly Gly Arg
                   470
                                      475
Gly Pro Lys Gly Glu Lys Gly Asn Glu Gly Leu Cys Ala Cys Glu Pro
               485
                                  490
Gly Pro Met Gly Pro Pro Gly Pro Pro Gly Leu Pro Gly Arg Gln Gly
                              505
Ser Lys Gly Asp Leu Gly Leu Pro Gly Trp Leu Gly Thr Lys Gly Asp
                          520
Pro Gly Pro Pro Gly Ala Glu Gly Pro Pro Gly Leu Pro Gly Lys His
                      535
                                          540
Gly Ala Ser Gly Pro Pro Gly Asn Lys Gly Ala Lys Gly Asp Met Val
                   550
                                      555
Val Ser Arg Val Lys Gly His Lys Gly Glu 'Arg Gly Pro Asp Gly Pro
               565
                                  570
Pro Gly Phe Pro Gly Gln Pro Gly Ser His Gly Arg Asp Gly His Ala
                               585
Gly Glu Lys Gly Asp Pro Gly Pro Pro Gly Asp His Glu Asp Ala Thr
                           600
Pro Gly Gly Lys Gly Phe Pro Gly Pro Leu Gly Pro Pro Gly Lys Ala
                      615
                                          620
Gly Pro Val Gly Pro Pro Gly Leu Gly Phe Pro Gly Pro Pro Gly Glu
                  630
                                     635
Arg Gly His Pro Gly Val Pro Gly His Pro Gly Val Arg Gly Pro Asp
                                  650
               645
Gly Leu Lys Gly Gln Lys Gly Asp Thr Ile Ser Cys Asn Val Thr Tyr
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Pro Gly Arg His Gly Pro Pro Gly Phe Asp Gly Pro Pro Gly Pro Lys Gly Phe Pro Gly Pro Gln Gly Ala Pro Gly Leu Ser Gly Ser Asp Gly His Lys Gly Arg Pro Gly Thr Pro Gly Thr Ala Glu Ile Pro Gly Pro Pro Gly Phe Arg Gly Asp Met Gly Asp Pro Gly Phe Gly Glu Lys Gly Ser Ser Pro Val Gly Pro Pro Gly Pro Pro Gly Ser Pro Gly Val Asn Gly Gln Lys Gly Ile Pro Gly Asp Pro Ala Phe Gly His Leu Gly Pro Pro Gly Lys Arg Gly Leu Ser Gly Val Pro Gly Ile Lys Gly Pro Arg Gly Asp Pro Gly Cys Pro Gly Ala Glu Gly Pro Ala Gly Ile Pro Gly Phe Leu Gly Leu Lys Gly Pro Lys Gly Arg Glu Gly His Ala Gly Phe Pro Gly Val Pro Gly Pro Pro Gly His Ser Cys Glu Arg Gly Ala Pro Gly Ile Pro Gly Gln Pro Gly Leu Pro Gly Tyr Pro Gly Ser Pro Gly Ala Pro Gly Gly Lys Gly Gln Pro Gly Asp Val Gly Pro Pro Gly Pro Ala Gly Met Lys Gly Leu Pro Gly Leu Pro Gly Arg Pro Gly Ala His Gly Pro Pro Gly Leu Pro Gly Ile Pro Gly Pro Phe Gly Asp Asp Gly Leu Pro Gly Pro Pro Gly Pro Lys Gly Pro Arg Gly Leu Pro Gly Phe Pro Gly Phe Pro Gly Glu Arg Gly Lys Pro Gly Ala Glu Gly Cys Pro Gly Ala Lys Gly Glu Pro Gly Glu Lys Gly Met Ser Gly Leu Pro Gly Asp Arg Gly Leu Arg Gly Ala Lys Gly Ala Ile Gly Pro Pro Gly Asp Glu Gly Glu Met Ala Ile Ile Ser Gln Lys Gly Thr Pro Gly Glu Pro Gly Pro Pro Gly Asp Asp Gly Phe Pro Gly Glu Arg Gly Asp Lys Gly Thr Pro Gly Met Gln Gly Arg Arg Gly Glu Leu Gly Arg Tyr Gly Pro Pro Gly Phe His Arg Gly Glu Pro Gly Glu Lys Gly Gln Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Ser Thr Gly Leu Arg Gly Phe Ile Gly Phe Pro Gly Leu Pro Gly Asp Gln Gly Glu Pro Gly Ser Pro Gly Pro Pro Gly Phe Ser Gly Ile Asp Gly Ala Arg Gly Pro Lys Gly Asn Lys Gly Asp Pro Ala Ser His Phe Gly Pro Pro Gly Pro Lys Gly Glu Pro Gly Ser Pro Gly Cys Pro Gly His Phe Gly Ala Ser Gly Glu Gln Gly Leu Pro Gly Ile Gln Gly Pro Arg Gly Ser Pro Gly Arg Pro Gly Pro Pro Gly Ser Ser Gly Pro Pro Gly Cys Pro Gly Asp His Gly Met Pro Gly Leu Arg Gly Gln Pro Gly Glu Met Gly Asp Pro Gly Pro

1140 1145 Arg Gly Leu Gln Gly Asp Pro Gly Ile Pro Gly Pro Pro Gly Ile Lys 1155 1160 1165 Gly Pro Ser Gly Ser Pro Gly Leu Asn Gly Leu His Gly Leu Lys Gly 1170 1175 1180 Gln Lys Gly Thr Lys Gly Ala Ser Gly Leu His Asp Val Gly Pro Pro 1185 1190 1195 1200 Gly Pro Val Gly Ile Pro Gly Leu Lys Gly Glu Arg Gly Asp Pro Gly 1205 1210 1215 Ser Pro Gly Ile Ser Pro Pro Gly Pro Arg Gly Lys Lys Gly Pro Pro 1230 1220 1225 Gly Pro Pro Gly Ser Ser Gly Pro Pro Gly Pro Ala Gly Ala Thr Gly 1235 1240 1245 Arg Ala Pro Lys Asp Ile Pro Asp Pro Gly Pro Pro Gly Asp Gln Gly 1250 1255 1260 Pro Pro Gly Pro Asp Gly Pro Arg Gly Ala Pro Gly Pro Pro Gly Leu 1265 1270 1275 Pro Gly Ser Val Asp Leu Leu Arg Gly Glu Pro Gly Asp Cys Gly Leu 1285 1290 1295 Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Pro Gly Tyr Lys 1300 1305 1310 Gly Phe Pro Gly Cys Asp Gly Lys Asp Gly Gln Lys Gly Pro Val Gly 1315 1320 1325 Phe Pro Gly Pro Gln Gly Pro His Gly Phe Pro Gly Pro Pro Gly Glu 1330 1335 1340 Lys Gly Leu Pro Gly Pro Pro Gly Arg Lys Gly Pro Thr Gly Leu Pro 1345 1350 1355 1360 Gly Pro Arg Gly Glu Pro Gly Pro Pro Ala Asp Val Asp Asp Cys Pro 1365 1370 1375 Arg Ile Pro Gly Leu Pro Gly Ala Pro Gly Met Arg Gly Pro Glu Gly 1380 1385 Ala Met Gly Leu Pro Gly Met Arg Gly Pro Ser Gly Pro Gly Cys Lys 1400 1395 1405 Gly Glu Pro Gly Leu Asp Gly Arg Arg Gly Val Asp Gly Val Pro Gly 1415 1420 Ser Pro Gly Pro Pro Gly Arg Lys Gly Asp Thr Gly Glu Asp Gly Tyr 1425 . 1430 1435 Pro Gly Gly Pro Gly Pro Gly Pro Ile Gly Asp Pro Gly Pro Lys 1445 1450 1455 Gly Phe Gly Pro Gly Tyr Leu Gly Gly Phe Leu Leu Val Leu His Ser 1460 1465 1470 Gln Thr Asp Gln Glu Pro Thr Cys Pro Leu Gly Met Pro Arg Leu Trp 1475 1480 1485 Thr Gly Tyr Ser Leu Leu Tyr Leu Glu Gly Gln Glu Lys Ala His Asn 1490 1495 1500 Gln Asp Leu Gly Leu Ala Gly Ser Cys Leu Pro Val Phe Ser Thr Leu 1505 1510 1515 1520 Pro Phe Ala Tyr Cys Asn Ile His Gln Val Cys His Tyr Ala Gln Arq 1525 1530 1535 Asn Asp Arg Ser Tyr Trp Leu Ala Ser Ala Ala Pro Leu Pro Met Met 1540 1545 1550 Pro Leu Ser Glu Glu Ala Ile Arg Pro Tyr Val Ser Arg Cys Ala Val 1555 1560 1565 Cys Glu Ala Pro Ala Gln Ala Val Ala Val His Ser Gln Asp Gln Ser 1575 1580 Ile Pro Pro Cys Pro Gln Thr Trp Arg Ser Leu Trp Ile Gly Tyr Ser 1585 1590 1595 Phe Leu Met His Thr Gly Ala Gly Asp Gln Gly Gly Gln Ala Leu 1610

 Met
 Ser
 Pro
 Gly
 Ser
 Cys
 Leu
 Glu
 Asp
 Phe
 Arg
 Ala
 Ala
 Pro
 Phe
 Leu
 Leu
 Leu
 Leu
 Leu
 Leu
 Leu
 Leu
 Thr
 Cys
 His
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 Glu
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 Ser
 Ser
 Ala

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<210> 1442 <211> 153 <212> PRT <213> Homo sapiens

<400> 1442 Met Gly Val Met Ala Pro Arg Thr Leu Leu Leu Leu Leu Leu Gly Ala 5 10 Leu Ala Leu Thr Glu Thr Trp Ala Gly Glu Cys Gly Val Gly Arg Glu 20 25 Arg Ala Ser Ala Gly Arg Ser Glu Trp Pro Ala Arg Pro Gly Glu Pro 40 Arg Arg Glu Glu Gly Arg Ala Gly Leu Ser Leu Ser Ser Pro Pro Gly 55 Ser His Ser Leu Arg Tyr Phe Ser Thr Ala Val Ser Gln Pro Gly Arg 75 70 Gly Glu Pro Arg Phe Ile Ala Val Gly Tyr Val Asp Asp Thr Glu Phe 90 85 Val Arg Phe Asp Ser Asp Ser Val Ser Pro Arg Met Glu Arg Arg Ala 100 105 Pro Trp Val Glu Glu Glu Gly Leu Glu Tyr Trp Asp Gln Glu Thr Arg 120 125 Asn Ala Lys Gly His Ala Gln Ile Tyr Arg Val Asn Leu Arg Thr Leu 135 Leu Arg Tyr Tyr Asn Gln Ser Glu Ala 150 153

<210> 1443 <211> 58 <212> PRT <213> Homo sapiens

<210> 1444 <211> 69 <212> PRT <213> Homo sapiens

<400> 1444 Met Pro Val Pro Leu Ala Tyr Phe Gln Ser Ser Ile Val Leu Phe Pro 5 10 Leu Ile Phe Ser Leu Val Thr Cys Val Ser Leu Asp Gly Glu Pro Lys 20 25 Ser Val Val Gly Val Ile Ser Ile Ser Ala Tyr Tyr Arg Ala Ile Ser 35 40 45 Ile Leu Leu Ile Phe Ser Lys Ser Phe Cys Cys Ala Ser Leu Ala Gly 50 60 Val Leu Val Ile 65 68

<210> 1445 <211> 826 <212> PRT <213> Homo sapiens

(213) Homo Baptens

<400> 1445 Met Gly Trp Leu Cys Ser Gly Leu Leu Phe Pro Val Ser Cys Leu Val 10 Leu Gln Val Ala Ser Ser Gly Asn Met Lys Val Leu Gln Glu Pro 20 25 Thr Cys Val Ser Asp Tyr Met Ser Ile Ser Thr Cys Glu Trp Lys Met 40 Asn Gly Pro Thr Asn Cys Ser Thr Glu Leu Arg Leu Leu Tyr Gln Leu 55 60 Val Phe Leu Leu Ser Glu Ala His Thr Cys Val Pro Glu Asn Asn Gly 75 Gly Ala Gly Cys Val Cys His Leu Leu Met Asp Asp Val Val Ser Ala 85 90 Asp Asn Tyr Thr Leu Asp Leu Trp Ala Gly Gln Gln Leu Leu Trp Lys 100 105 Gly Ser Phe Lys Pro Ser Glu His Val Lys Pro Arg Ala Pro Gly Asn 115 120 125 Leu Thr Val His Thr Asn Val Ser Asp Thr Leu Leu Leu Thr Trp Ser 135 140 Asn Pro Tyr Pro Pro Asp Asn Tyr Leu Tyr Asn His Leu Thr Tyr Ala 150 155 Val Asn Ile Trp Ser Glu Asn Asp Pro Ala Asp Phe Arg Ile Tyr Asn 165 170 175 Val Thr Tyr Leu Glu Pro Ser Leu Arg Ile Ala Ala Ser Thr Leu Lys 180 185 Ser Gly Ile Ser Tyr Arg Ala Arg Val Arg Ala Trp Ala Gln Cys Tyr 200 Asn Thr Trp Ser Glu Trp Ser Pro Ser Thr Lys Trp His Asn Ser 215 Tyr Arg Glu Pro Phe Glu Gln His Leu Leu Leu Gly Val Ser Val Ser 235

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Cys Ile Val Ile Leu Ala Val Cys Leu Leu Cys Tyr Val Ser Ile Thr
                                  250
Lys Ile Lys Lys Glu Trp Trp Asp Gln Ile Pro Asn Pro Ala Arg Ser
           260
                              265
Arg Leu Val Ala Ile Ile Ile Gln Asp Ala Gln Gly Ser Gln Trp Glu
                           280
                                              285
Lys Arg Ser Arg Gly Gln Glu Pro Ala Lys Cys Pro His Trp Lys Asn
                       295
                                          300
Cys Leu Thr Lys Leu Leu Pro Cys Phe Leu Glu His Asn Met Lys Arg
                   310
                                      315
Asp Glu Asp Pro His Lys Ala Ala Lys Glu Met Pro Phe Gln Gly Ser
               325
                                  330
Gly Lys Ser Ala Trp Cys Pro Val Glu Ile Ser Lys Thr Val Leu Trp
           340
                               345
Pro Glu Ser Ile Ser Val Val Arg Cys Val Glu Leu Phe Glu Ala Pro
                           360
Val Glu Cys Glu Glu Glu Glu Val Glu Glu Glu Lys Gly Ser Phe
                       375
                                          380
Cys Ala Ser Pro Glu Ser Ser Arg Asp Phe Gln Glu Gly Arg Glu
                   390
                                      395
Gly Ile Val Ala Arg Leu Thr Glu Ser Leu Phe Leu Asp Leu Leu Gly
               405
                                  410
Glu Glu Asn Gly Gly Phe Cys Gln Gln Asp Met Gly Glu Ser Cys Leu
           420
                              425
Leu Pro Pro Ser Gly Ser Thr Ser Ala His Met Pro Trp Asp Glu Phe
                          440
                                              445
Pro Ser Ala Gly Pro Lys Glu Ala Pro Pro Trp Gly Lys Glu Gln Pro
                      455
                                          460
Leu His Leu Glu Pro Ser Pro Pro Ala Ser Pro Thr Gln Ser Pro Asp
                  470
                                      475
Asn Leu Thr Cys Thr Glu Thr Pro Leu Val Ile Ala Gly Asn Pro Ala
              485 490
Tyr Arg Ser Phe Ser Asn Ser Leu Ser Gln Ser Pro Cys Pro Arg Glu
          500 505
Leu Gly Pro Asp Pro Leu Leu Ala Arg His Leu Glu Glu Val Glu Pro
       515
                         520
Glu Met Pro Cys Val Pro Gln Leu Ser Glu Pro Thr Thr Val Pro Gln
                      535
Pro Glu Pro Glu Thr Trp Glu Gln Ile Leu Arg Arg Asn Val Leu Gln
                  550
                                     555
His Gly Ala Ala Ala Pro Val Ser Ala Pro Thr Ser Gly Tyr Gln
                                  570
Glu Phe Val His Ala Val Glu Gln Gly Gly Thr Gln Ala Ser Ala Val
                               585
Val Gly Leu Gly Pro Pro Gly Glu Ala Gly Tyr Lys Ala Phe Ser Ser
                           600
Leu Leu Ala Ser Ser Ala Val Ser Pro Glu Lys Cys Gly Phe Gly Ala
                       615
                                          620
Ser Ser Gly Glu Glu Gly Tyr Lys Pro Phe Gln Asp Leu Ile Pro Gly
                   630
                                      635
Cys Pro Gly Asp Pro Ala Pro Val Pro Val Pro Leu Phe Thr Phe Gly
                                  650
Leu Asp Arg Glu Pro Pro Arg Ser Pro Gln Ser Ser His Leu Pro Ser
                              665
Ser Ser Pro Glu His Leu Gly Leu Glu Pro Gly Glu Lys Val Glu Asp
                          680
Met Pro Lys Pro Pro Leu Pro Gln Glu Gln Ala Thr Asp Pro Leu Val
                     695
                                          700
Asp Ser Leu Gly Ser Gly Ile Val Tyr Ser Ala Leu Thr Cys His Leu
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710 715 Cys Gly His Leu Lys Gln Cys His Gly Gln Glu Asp Gly Gln Thr 725 730 Pro Val Met Ala Ser Pro Cys Cys Gly Cys Cys Cys Gly Asp Arg Ala 740 , 745 Ser Pro Pro Thr Thr Pro Leu Arg Ala Pro Asp Pro Ser Pro Gly Gly 755 760 Val Pro Leu Glu Ala Ser Leu Cys Pro Ala Ser Leu Ala Pro Ser Gly 775 780 Ile Ser Glu Lys Ser Lys Ser Ser Ser Ser Phe His Pro Ala Pro Gly 790 795 Asn Ala Gln Ser Ser Ser Gln Thr Pro Lys Ile Val Asn Phe Val Ser 805 810 Val Gly Pro Thr Tyr Met Arg Val Ser \*

<210> 1446 <211> 367 <212> PRT <213> Homo sapiens

<400> 1446

Met Ala Leu Arg Phe Leu Leu Gly Phe Leu Leu Ala Gly Val Asp Leu Gly Val Tyr Leu Met Arg Leu Glu Leu Cys Asp Pro Thr Gln Arg Leu 20 25 Arg Val Ala Leu Ala Gly Glu Leu Val Gly Val Gly Gly His Phe Leu 40 45 Phe Leu Gly Leu Ala Leu Val Ser Lys Asp Trp Arg Phe Leu Gln Arg 55 60 Met Ile Thr Ala Pro Cys Ile Leu Phe Leu Phe Tyr Gly Trp Pro Gly 70 Leu Phe Leu Glu Ser Ala Arg Trp Leu Ile Val Lys Arg Gln Ile Glu 85 90 Glu Ala Gln Ser Val Leu Arg Ile Leu Ala Glu Arg Asn Arg Pro His 100 105 110 Gly Gln Met Leu Gly Glu Glu Ala Gln Glu Ala Leu Gln Asp Leu Glu 120 125 Asn Thr Cys Pro Leu Pro Ala Thr Ser Ser Phe Ser Phe Ala Ser Leu 135 Leu Asn Tyr Arg Asn Ile Trp Lys Asn Leu Leu Ile Leu Gly Phe Thr 150 155 Asn Phe Ile Ala His Ala Ile Arg His Cys Tyr Gln Pro Val Gly Gly 170 165 Gly Gly Ser Pro Ser Asp Phe Tyr Leu Cys Ser Leu Leu Ala Ser Gly 185 Thr Ala Ala Leu Ala Cys Val Phe Leu Gly Val Thr Val Asp Arg Phe 200 Gly Arg Arg Gly Ile Leu Leu Ser Met Thr Leu Thr Gly Ile Ala 215 220 Ser Leu Val Leu Leu Gly Leu Trp Asp Tyr Leu Asn Glu Ala Ala Ile 230 235 Thr Thr Phe Ser Val Leu Gly Leu Phe Ser Ser Gln Ala Ala Ala Ile 245 250 Leu Ser Thr Leu Leu Ala Ala Glu Val Ile Pro Thr Thr Val Arg Gly 265

<210> 1447 <211> 79 <212> PRT <213> Homo sapiens

<210> 1448 <211> 276 <212> PRT <213> Homo sapiens

<400> 1448 Met Val Trp Val Val Leu Leu Ser Leu Leu Cys Tyr Leu Val Leu Phe 5 10 Leu Cys Arg His Ser Ser His Arg Gly Val Phe Leu Ser Val Thr Ile 20 25 Leu Ile Tyr Leu Leu Met Gly Glu Met His Met Val Asp Thr Val Thr 40 Trp His Lys Met Arg Gly Ala Gln Met Ile Val Ala Met Lys Ala Val 55 Ser Leu Gly Phe Asp Leu Asp Arg Gly Glu Val Gly Thr Val Pro Ser 70 75 Pro Val Glu Phe Met Gly Tyr Leu Tyr Phe Val Gly Thr Ile Val Phe 90 85 Gly Pro Trp Ile Ser Phe His Ser Tyr Leu Gln Ala Val Gln Gly Arg 110 100 105 Pro Leu Ser Cys Arg Trp Leu Gln Lys Val Ala Arg Ser Leu Ala Leu 115 120 Ala Leu Leu Cys Leu Val Leu Ser Thr Cys Val Gly Pro Tyr Leu Phe

135 Pro Tyr Phe Ile Pro Leu Asn Gly Asp Arg Leu Leu Arg Lys Trp Leu 150 155 . 160 Arg Ala Tyr Glu Ser Ala Val Ser Phe His Phe Ser Asn Tyr Phe Val 170 165 Gly Phe Leu Ser Glu Ala Thr Ala Thr Leu Ala Gly Ala Gly Phe Thr 185 Glu Glu Lys Asp His Leu Glu Trp Asp Leu Thr Val Ser Lys Pro Leu 200 Asn Val Glu Leu Pro Arg Ser Met Val Glu Val Val Thr Ser Trp Asn 215 220 Leu Pro Met Ser Tyr Trp Leu Asn Asn Tyr Gly Phe Lys Asn Ala Leu 230 235 Arg Leu Gly Thr Leu Leu Gly Cys Ala Gly His Leu Cys Ser Gln Arg 245 250 Pro Ser Lys Leu Leu Lys Phe Pro Pro Gly Trp Gly Pro Cys Cys Pro 265 260 Gly Phe Leu \* 275

<210> 1449 <211> 597 <212> PRT <213> Homo sapiens

<400> 1449

Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Lys Gly Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Leu Val Gln 25 Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe 35 40 Ser Ser Tyr Trp Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu 55 Val Trp Val Ser Arg Ile Asn Thr Asp Gly Ser Ser Thr Ser Tyr Ala 70 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn 85 90 Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val 105 100 Tyr Tyr Cys Ala Arg Ala Asp Asn Cys Ser Ser Thr Ser Cys Tyr Lys 120 115 125 Cys Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly 135 140 Ser Ala Ser Ala Pro Thr Leu Phe Pro Leu Val Ser Cys Glu Asn Ser 150 155 Pro Ser Asp Thr Ser Ser Val Ala Val Gly Cys Leu Ala Gln Asp Phe 165 170 Leu Pro Asp Ser Ile Thr Phe Ser Trp Lys Tyr Lys Asn Asn Ser Asp 180 185 Ile Ser Ser Thr Arg Gly Phe Pro Ser Val Leu Arg Gly Gly Lys Tyr 200 Ala Ala Thr Ser Gln Val Leu Leu Pro Ser Lys Asp Val Met Gln Gly 220 215 Thr Asp Glu His Val Val Cys Lys Val Gln His Pro Asn Gly Asn Lys 235

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Glu Lys Asn Val Pro Leu Pro Val Ile Ala Glu Leu Pro Pro Lys Val
               245
                                   250
Ser Val Phe Val Pro Pro Arg Asp Gly Phe Phe Gly Asn Pro Arg Lys
                               265
Ser Lys Leu Ile Cys Gln Ala Thr Gly Phe Ser Pro Arg Gln Ile Gln
                           280
                                               285
Val Ser Trp Leu Arg Glu Gly Lys Gln Val Gly Ser Gly Val Thr Thr
                       295
                                           300
Asp Gln Val Gln Ala Glu Ala Lys Glu Ser Gly Pro Thr Thr Tyr Lys
                   310
                                       315
Val Thr Ser Thr Leu Thr Ile Lys Glu Ser Asp Trp Leu Ser Gln Ser
               325
                                   330
Met Phe Thr Cys Arg Val Asp His Arg Gly Leu Thr Phe Gln Gln Asn
           340
                               345
Ala Ser Ser Met Cys Val Pro Asp Gln Asp Thr Ala Ile Arg Val Phe
       355
                          360
                                              365
Ala Ile Pro Pro Ser Phe Ala Ser Ile Phe Leu Thr Lys Ser Thr Lys
                       375
                                           380
Leu Thr Cys Leu Val Thr Asp Leu Thr Thr Tyr Asp Ser Val Thr Ile
                   390
                                       395
Ser Trp Thr Arg Gln Asn Gly Glu Ala Val Lys Thr His Thr Asn Ile
               405
                                   410
Ser Glu Ser His Pro Asn Ala Thr Phe Ser Ala Val Gly Glu Ala Ser
           420
                               425
Ile Cys Glu Asp Asp Trp Asn Ser Gly Glu Arg Phe Thr Cys Thr Val
                          440
Thr His Thr Asp Leu Pro Ser Pro Leu Lys Gln Thr Ile Ser Arg Pro
                      455
                                          460
Lys Gly Val Ala Leu His Arg Pro Asp Val Tyr Leu Leu Pro Pro Ala
         470
                                     475
Arg Glu Gln Leu Asn Leu Arg Glu Ser Ala Thr Ile Thr Cys Leu Val
               485
                                490
Thr Gly Phe Ser Pro Ala Asp Val Phe Val Gln Trp Met Gln Arg Gly
                               505
Gln Pro Leu Ser Pro Glu Lys Tyr Val Thr Ser Ala Pro Met Pro Glu
       515
                           520
                                              525
Pro Gln Ala Pro Gly Arg Tyr Phe Ala His Ser Ile Leu Thr Val Ser
                       535
                                           540
Glu Glu Glu Trp Asn Thr Gly Glu Thr Tyr Thr Cys Val Val Ala His
                   550
                                       555
Glu Ala Leu Pro Asn Arg Val Thr Glu Arg Thr Val Asp Lys Ser Thr
              565
                                  570
Gly Lys Pro Thr Leu Tyr Asn Val Ser Leu Val Met Ser Asp Thr Ala
           580
                               585
Gly Thr Cys Tyr *
       595 596
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<210> 1450 <211> 276 <212> PRT <213> Homo sapiens

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25
Glu Pro Cys Val Asn Glu Gly Met Cys Val Thr Tyr His Asn Gly Thr
                            40
Gly Tyr Cys Lys Cys Pro Glu Gly Phe Leu Gly Glu Tyr Cys Gln His
                        55
Arg Asp Pro Cys Glu Lys Asn Arg Cys Gln Asn Gly Gly Thr Cys Val
                                       75
                   70
Ala Gln Ala Met Leu Gly Lys Ala Thr Cys Arg Cys Ala Ser Gly Phe
                                    90
Thr Gly Glu Asp Cys Gln Tyr Ser Thr Ser His Pro Cys Phe Val Ser
                               105
Arg Pro Cys Leu Asn Gly Gly Thr Cys His Met Leu Ser Arg Asp Thr
                          120
Tyr Glu Cys Thr Cys Gln Val Gly Phe Thr Gly Lys Glu Cys Gln Trp
                      135
                                          140
Thr Asp Ala Cys Leu Ser His Pro Cys Ala Asn Gly Ser Thr Cys Thr
                  150
                                      155
Thr Val Ala Asn Gln Phe Ser Cys Lys Cys Leu Thr Gly Phe Thr Gly
               165
                                  170
Gln Lys Cys Glu Thr Asp Val Asn Glu Cys Asp Ile Pro Gly His Cys
                               185
                                                  190
Gln His Gly Gly Ile Cys Leu Asn Leu Pro Gly Ser Tyr Gln Cys Gln
                          200
                                              205
Cys Leu Gln Gly Phe Thr Gly Gln Tyr Cys Asp Ser Leu Tyr Val Pro
                                         220
                      215
Cys Ala Pro Ser Pro Cys Val Asn Gly Gly Thr Cys Arg Gln Thr Gly
                  230
                                     235
Asp Phe Thr Phe Glu Cys Asn Cys Leu Pro Glu Thr Val Arg Arg Gly
                        250
            245
Thr Glu Leu Trp Glu Arg Asp Arg Glu Val Trp Asn Gly Lys Glu His
                               265
           260
Asp Glu Asn
       275
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<210> 1451

<211> 121

<212> PRT

<213> Homo sapiens

<400> 1451

Met Glu Ser Gly Leu Ser Trp Ile Phe Leu Leu Ala Ile Leu Lys Gly 10 Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Leu Val Gln 25 Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Arg Phe 40 Asp Glu Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Gly Gly Ile Ser Trp Asn Arg Asp Ser Ile Ala Tyr Ala 70 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Gln Ser 90 Tyr Val Tyr Leu Gln Met Asn Ser Leu Arg His Glu Asp Thr Ala Leu 105 100 Tyr Tyr Cys Thr Lys Leu Arg Ser Ser 120 121

<210> 1452 <211> 48 <212> PRT <213> Homo sapiens

<400> 1452

Met Glu Arg Gly Asn Ala Leu Val Val Leu Arg Ser Leu Leu Trp Pro 1 5 5 10 10 15 Gly Leu Thr Phe Tyr His Ala Pro Arg Thr Lys Asn Tyr Gly Tyr Val 20 25 30 Tyr Val Gly Thr Gly Glu Lys Asn Met Asp Leu Pro Phe Met Leu \*

<210> 1453 <211> 123 <212> PRT <213> Homo sapiens

<400> 1453 Met Ile Thr Val Gln Phe Ser Tyr Thr Ala Val Lys Trp Leu Leu Asn 10 Cys Phe Val Leu Ile Leu Tyr Val Ile Leu Ser Ile Leu Phe Gln Val 25 Ser Gln Lys Asn Ser Ser Lys Leu Gly Arg Phe Lys Asn Leu Phe Asn 35 His Lys Glu Cys Ser Lys Leu Leu Phe Asn Arg Asn Gln Ala Gln Thr 55 60 Leu Glu Leu Thr Ala Asp Arg Ile Arg Phe Gly Leu Phe Pro Glu Trp 70 75 Lys His Phe Ser His Thr Thr Ser Leu Cys Thr Ala Lys Met Leu Ala 85 90 Tyr Pro Leu Trp Phe Pro Ser Phe Ser Leu Ala Ser Gln Arg Asn Leu 100 105 Pro Pro His Pro Leu Tyr Tyr Ile Phe Tyr \*

120

<210> 1454 <211> 327 <212> PRT <213> Homo sapiens

115

```
55
Leu Leu His Gly Phe Pro Thr Ser Ser Tyr Asp Trp Tyr Lys Ile Trp
65 70 75
Glu Gly Leu Thr Leu Arg Phe His Arg Val Ile Ala Leu Asp Phe Leu
             85
                             90
Gly Phe Gly Phe Ser Asp Lys Pro Arg Pro His His Tyr Ser Ile Phe
                        105
Glu Gln Ala Ser Ile Val Glu Ala Leu Leu Arg His Leu Gly Leu Gln
                    120 `
Asn Arg Arg Ile Asn Leu Leu Ser His Asp Tyr Gly Asp Ile Val Ala
                  135
                       140
Gln Glu Leu Leu Tyr Arg Tyr Lys Gln Asn Arg Ser Gly Arg Leu Thr
145 150
                     155
Ile Lys Ser Leu Cys Leu Ser Asn Gly Gly Ile Phe Pro Glu Thr His
                 170
           165
Arg Pro Leu Leu Gln Lys Leu Leu Lys Asp Gly Gly Val Leu Ser
              185
        180
Pro Ile Leu Thr Arg Leu Met Asn Phe Phe Val Phe Ser Arg Gly Leu
                      200
                                    205
Thr Pro Val Phe Gly Pro Tyr Thr Arg Pro Ser Glu Ser Glu Leu Trp
                215
                                220
Asp Met Trp Ala Gly Ile Arg Asn Asn Asp Gly Asn Leu Val Ile Asp
       230 235
Ser Leu Leu Gln Tyr Ile Asn Gln Arg Lys Lys Phe Arg Arg Arg Trp
                           250
           245
Val Gly Ala Leu Ala Ser Val Thr Ile Pro Ile His Phe Ile Tyr Gly
              265
Pro Leu Asp Pro Val Asn Pro Tyr Pro Glu Phe Leu Glu Leu Tyr Arg
 275 280 285
Lys Thr Leu Pro Arg Ser Thr Val Ser Ile Leu Asp Asp His Ile Ser
  290 295
                                  300
His Tyr Pro Gln Leu Glu Asp Pro Met Gly Phe Leu Asn Ala Tyr Met
                               315
Gly Phe Ile Asn Ser Phe *
            325 326
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<210> 1455 <211> 57 <212> PRT

<213> Homo sapiens

<210> 1456 <211> 48 <212> PRT

## <213> Homo sapiens

<210> 1457 <211> 459 <212> PRT <213> Homo sapiens

<400> 1457 Met Ser Asp Leu Leu Ser Val Phe Leu His Leu Leu Leu Leu Phe Lys 10 Leu Val Ala Pro Val Thr Phe Arg His His Arg Tyr Asp Asp Leu Val 25 Arg Thr Leu Tyr Lys Val Gln Asn Glu Cys Pro Gly Ile Thr Arg Val Tyr Ser Ile Gly Arg Ser Val Glu Gly Arg His Leu Tyr Val Leu Glu 55 Phe Ser Asp His Pro Gly Ile His Glu Pro Leu Glu Pro Glu Val Lys 70 Tyr Val Gly Asn Met His Gly Asn Glu Ala Leu Gly Arg Glu Leu Met Leu Gln Leu Ser Glu Phe Leu Cys Glu Glu Phe Arg Asn Arg Asn Gln 100 105 Arg Ile Val Gln Leu Ile Gln Asp Thr Arg Ile His Ile Leu Pro Ser 120 Met Asn Pro Asp Gly Tyr Glu Val Ala Ala Ala Gln Gly Pro Asn Lys 135 Pro Gly Tyr Leu Val Gly Arg Asn Asn Ala Asn Gly Val Asp Leu Asn 150 Arg Asn Phe Pro Asp Leu Asn Thr Tyr Ile Tyr Tyr Asn Glu Lys Tyr 165 170 Gly Gly Pro Asn His His Leu Pro Leu Pro Asp Asn Trp Lys Ser Gln 185 Val Glu Pro Glu Thr Arg Ala Val Ile Arg Trp Met His Ser Phe Asn 200 Phe Val Leu Ser Ala Asn Leu His Gly Gly Ala Val Val Ala Asn Tyr 215 220 Pro Tyr Asp Lys Ser Phe Glu His Arg Val Arg Gly Val Arg Arg Thr 230 235 Ala Ser Thr Pro Thr Pro Asp Asp Lys Leu Phe Gln Lys Leu Ala Lys 245 250 Val Tyr Ser Tyr Ala His Gly Trp Met Phe Gln Gly Trp Asn Cys Gly 260 265 Asp Tyr Phe Pro Asp Gly Ile Thr Asn Gly Ala Ser Trp Tyr Ser Leu 280 285 Ser Lys Gly Met Gln Asp Phe Asn Tyr Leu His Thr Asn Cys Phe Glu 295 Ile Thr Leu Glu Leu Ser Cys Asp Lys Phe Pro Pro Glu Glu Glu Leu

310 315 Gln Arg Glu Trp Leu Gly Asn Arg Glu Ala Leu Ile Gln Phe Leu Glu 330 325 Gln Val His Gln Gly Ile Lys Gly Met Val Leu Asp Glu Asn Tyr Asn 345 340 Asn Leu Ala Asn Ala Val Ile Ser Val Ser Gly Ile Asn His Asp Val 360 Thr Ser Gly Asp His Gly Asp Tyr Phe Arg Leu Leu Pro Gly Ile 375 Tyr Thr Val Ser Ala Thr Ala Pro Gly Tyr Asp Pro Glu Thr Val Thr 390 395 Val Thr Val Gly Pro Ala Glu Pro Thr Leu Val Asn Phe His Leu Lys 410 405 Arg Ser Ile Pro Gln Val Ser Pro Val Arg Arg Ala Pro Ser Arg Arg 425 His Gly Val Arg Ala Lys Val Gln Pro Gln Pro Arg Lys Lys Glu Met 440 435 Glu Met Arg Gln Leu Gln Arg Gly Pro Ala \* 455

<210> 1458 <211> 463 <212> PRT

<213> Homo sapiens

<400> 1458 Met Ala Arg Val Leu Gly Ala Pro Val Ala Leu Gly Leu Trp Ser Leu 10 5 Cys Trp Ser Leu Ala Ile Ala Thr Pro Leu Pro Pro Thr Ser Ala His 25 Gly Asn Val Ala Glu Gly Glu Thr Lys Pro Asp Pro Asp Val Thr Glu 40 45 Arg Cys Ser Asp Gly Trp Ser Phe Asp Ala Thr Thr Leu Asp Asp Asn 55 60 50 Gly Thr Met Leu Phe Phe Lys Gly Glu Phe Val Trp Lys Ser His Lys 70 75 Trp Asp Arg Glu Leu Ile Ser Glu Arg Trp Lys Asn Phe Pro Ser Pro 90 Val Asp Ala Ala Phe Arg Gln Gly His Asn Ser Val Phe Leu Ile Lys 105 Gly Asp Lys Val Trp Val Tyr Pro Pro Glu Lys Lys Glu Lys Gly Tyr 120 125 Pro Lys Leu Leu Gln Asp Glu Phe Pro Gly Ile Pro Ser Pro Leu Asp 135 140 Ala Ala Val Glu Cys His Arg Gly Glu Cys Gln Ala Glu Gly Val Leu 155 150 Phe Phe Gln Gly Asp Arg Glu Trp Phe Trp Asp Leu Ala Thr Gly Thr 170 165 Met Lys Glu Arg Ser Trp Pro Ala Val Gly Asn Cys Ser Ser Ala Leu 185 190 Arg Trp Leu Gly Arg Tyr Tyr Cys Phe Gln Gly Asn Gln Phe Leu Arg 200 Phe Asp Pro Val Arg Gly Glu Val Pro Pro Arg Tyr Pro Arg Asp Val 220 215 Arg Asp Tyr Phe Met Pro Cys Pro Gly Arg Gly His Gly His Arg Asn 235

Gly Thr Gly His Gly Asn Ser Thr His His Gly Pro Glu Tyr Met Arg 250 Cys Ser Pro His Leu Val Leu Ser Ala Leu Thr Ser Asp Asn His Gly 265 260 Ala Thr Tyr Ala Phe Ser Gly Thr His Tyr Trp Arg Leu Asp Thr Ser 280 Arg Asp Gly Trp His Ser Trp Pro Ile Ala His Gln Trp Pro Gln Gly 295 Pro Ser Ala Val Asp Ala Ala Phe Ser Trp Glu Glu Lys Leu Tyr Leu 310 315 Val Gln Gly Thr Gln Val Tyr Val Phe Leu Thr Lys Gly Gly Tyr Thr 330 Leu Val Ser Gly Tyr Pro Lys Arg Leu Glu Lys Glu Val Gly Thr Pro 340 345 350 His Gly Ile Ile Leu Asp Ser Val Asp Ala Ala Phe Ile Cys Pro Gly 360 365 Ser Ser Arg Leu His Ile Met Ala Gly Arg Arg Leu Trp Trp Leu Asp 375 Leu Lys Ser Gly Ala Gln Ala Thr Trp Thr Glu Leu Pro Trp Pro His 390 395 Glu Lys Val Asp Gly Ala Leu Cys Met Glu Lys Ser Leu Gly Pro Asn 405 410 Ser Cys Ser Ala Asn Gly Pro Gly Leu Tyr Leu Ile His Gly Pro Asn 420 425 Leu Tyr Cys Tyr Ser Asp Val Glu Lys Leu Asn Ala Ala Lys Ala Leu 440 Pro Gln Pro Gln Asn Val Thr Ser Leu Leu Gly Cys Thr His 455 460

<210> 1459 <211> 187 <212> PRT <213> Homo sapiens

<400> 1459 Met Gln Pro Ile Val Ala Lys Ala Leu Val Val Leu Leu Glu Val His 5 10 Pro Leu Gln Asp Gln Ala Glu Ser Gly Arg Leu Gly His Val His Leu 25 Leu Cys Ala Pro Ala Ala Leu Gln His Ala Leu Arg Gly Ile Thr Leu 35 40 45 His Asn Gly His His Gln Ala Asp His Leu Pro Asp Leu Met His His 55 Glu Ala Leu Ala Leu His Pro Asp His Arg Lys Leu Gln Ala Leu Pro 70 75 His Lys Gly Phe Leu Ala Val His Leu Gln Asp Val Ala Ala Gly Thr 90 Gly Ile Leu Arg Pro Leu Leu Arg Gly Glu Ile Val Glu Val Val Arg 100 105 Ala Leu Val Ala Gly Gln Glu Pro Val Asp Leu Gln Arg Leu Gly 120 Ala Gln Ala Val Gly Leu Ile Leu Asn Val Pro Val Leu Val Arg Lys 135 140 Gly Lys Arg Gly Gln Gln Val Ala Ile Gly Pro Gly Ile Thr Ser Val 150 155 Leu Gly Val Lys Pro Ala Arg Asp Pro Leu Gln Ser Gln Asn Pro Asn

165 170 175
Val Arg Gly Lys Val Ala Val Asp Leu Phe \*
180 185 186

<210> 1460 <211> 223 <212> PRT <213> Homo sapiens

<400> 1460 Met Lys Phe Ala Leu Phe Thr Ser Gly Val Ala Leu Thr Leu Ser Phe 10 Val Phe Met Tyr Ala Lys Cys Glu Asn Glu Pro Phe Ala Gly Val Ser 20 25 Glu Ser Tyr Asn Gly Thr Gly Glu Leu Gly Asn Leu Ile Ala Pro Cys 35 40 Asn Ala Asn Cys Asn Cys Ser Arg Ser Tyr Tyr Tyr Pro Val Cys Gly 55 60 Asp Gly Val Gln Tyr Phe Ser Pro Cys Phe Ala Gly Cys Ser Asn Pro Val Ala His Arg Lys Pro Lys Val Tyr Tyr Asn Cys Ser Cys Ile Glu 90 85 Arg Lys Thr Glu Ile Thr Ser Thr Ala Glu Thr Phe Gly Phe Glu Ala 105 Asn Ala Gly Lys Cys Glu Thr His Cys Ala Lys Leu Ala Ile Phe Leu 120 125 Cys Ile Val Phe Ile Gly Asn Ile Phe Thr Phe Met Ala Arg Ser Pro 135 140 Ile Thr Gly Ala Ile Pro Arg Gly Gly Asn His Arg Gln Arg Pro Pro 150 155 Thr Leu Gly Ile Gln Phe Met Ala Leu Arg Thr Leu Trp Thr Thr Pro 165 170 Trp Pro Ser Lys Thr Gly Cys Pro Ile His Gln Pro Gly Ser Leu Trp 185 Glu Lys Leu Gly Trp Arg Pro Leu Lys Thr Leu Arg Arg Pro Lys Pro 195 200 205 Ser Trp Asn Ala Leu Leu Ala Leu Ala His Pro Arg Ser Phe Gln 215 220 223

<210> 1461 <211> 210 <212> PRT <213> Homo sapiens

Arg Val Val Pro Leu Asn Pro Ala Thr Lys Leu Ser Pro Leu Glu Ser 70 75 Gln Met Ala Leu His Thr Lys Ala Val Glu Ala Gly Met Val Phe Gly 8.5 90 His Arg Ala Glu His Lys Asp Pro Arg Ser Val Trp Glu Ser Tyr Trp 100 105 Leu Leu Gly Ser Pro Trp Ala Glu Val Thr Arg Leu His Pro Arg Arg 120 Ala Gln Leu Gly Ser Leu Pro Pro Pro Asp Pro Arg Thr Thr His Arg 135 140 Arg Gly Ala Val Ser Ile Phe Leu Lys Gly Pro Phe Gly Asp Leu Val 150 155 Leu Ser Val Glu Arg Thr Asp Val Ala Leu Ser Ser Gln His Ile Pro 165 170 Gly Ser Gly Arg Pro Gln Leu Lys Gln Cys Gln Gly Pro Gln Gly Ser 180 185 190 His Leu Asp Arg Pro Thr Ala Cys Asn Ser Ala Leu Leu Arg Arg Gln 200 His 209

<210> 1462 <211> 56 <212> PRT <213> Homo sapiens

<210> 1463 <211> 66 <212> PRT <213> Homo sapiens

<210> 1464 <211> 200 <212> PRT <213> Homo sapiens

<400> 1464 Met Val Trp Arg Arg Leu Leu Arg Lys Arg Trp Val Leu Ala Leu Val 5 10 Phe Gly Leu Ser Leu Val Tyr Phe Leu Ser Ser Thr Phe Lys Gln Glu 20 25 Glu Arg Ala Val Arg Asp Arg Asn Leu Leu Gln Val His Asp His Asn 40 Gln Pro Ile Pro Trp Lys Val Gln Phe Asn Leu Gly Asn Ser Ser Arg 55 Pro Ser Asn Gln Cys Arg Asn Ser Ile Gln Gly Lys His Leu Ile Thr 70 Asp Glu Leu Gly Tyr Val Cys Glu Arg Lys Asp Leu Leu Val Asn Gly 85 90 Cys Cys Asn Val Asn Val Pro Ser Thr Lys Gln Tyr Cys Cys Asp Gly 105 100 110 Cys Trp Pro Asn Gly Cys Cys Ser Ala Tyr Glu Tyr Cys Val Ser Cys 120 Cys Leu Gln Pro Asn Lys Gln Leu Leu Glu Arg Phe Leu Asn Arg 135 140 Ala Ala Val Ala Phe Gln Asn Leu Phe Met Ala Val Glu Asp His Phe 150 155 Glu Leu Cys Leu Ala Lys Cys Arg Thr Ser Ser Gln Ser Val Gln His 170 175 Glu Asn Thr Tyr Arg Asp Pro Ile Ala Lys Tyr Cys Tyr Gly Glu Ser · 180 185 Pro Pro Glu Leu Phe Pro Ala \* 195 199

<210> 1465 <211> 46 <212> PRT <213> Homo sapiens

<210> 1466 <211> 56 <212> PRT <213> Homo sapiens

<210> 1467 <211> 366 <212> PRT <213> Homo sapiens

<400> 1467 Met Arg Gly Gln Val Val Thr Leu Ile Leu Leu Leu Leu Leu Lys Val 10 Tyr Gln Gly Lys Gly Cys Gln Gly Ser Ala Asp His Val Val Ser Ile Ser Gly Val Pro Leu Gln Leu Gln Pro Asn Ser Ile Gln Thr Lys Val 40 Asp Ser Ile Ala Trp Lys Lys Leu Leu Pro Ser Gln Asn Gly Phe His 55 His Ile Leu Lys Trp Glu Asn Gly Ser Leu Pro Ser Asn Thr Ser Asn Asp Arg Phe Ser Phe Ile Val Lys Asn Leu Ser Leu Leu Ile Lys Ala 85 90 Ala Gln Gln Asp Ser Gly Leu Tyr Cys Leu Glu Val Thr Ser Ile 105 Ser Gly Lys Val Gln Thr Ala Thr Phe Gln Val Phe Val Phe Asp Lys 115 120 Val Glu Lys Pro Arg Leu Gln Gly Gln Gly Lys Ile Leu Asp Arg Gly Arg Cys Gln Val Ala Leu Ser Cys Leu Val Ser Arg Asp Gly Asn Val 150 155 Ser Tyr Ala Trp Tyr Arg Gly Ser Lys Leu Ile Gln Thr Ala Gly Asn 165 170 Leu Thr Tyr Leu Asp Glu Glu Val Asp Ile Asn Gly Thr His Thr Tyr 185 Thr Cys Asn Val Ser Asn Pro Val Ser Trp Glu Ser His Thr Leu Asn 200 Leu Thr Gln Asp Cys Gln Asn Ala His Gln Glu Phe Arg Phe Trp Pro 215 220 Phe Leu Val Ile Ile Val Ile Leu Ser Ala Leu Phe Leu Gly Thr Leu 230 235 Ala Cys Phe Cys Val Trp Arg Arg Lys Arg Lys Glu Lys Gln Ser Glu 245 250 Thr Ser Pro Lys Glu Phe Leu Thr Ile Tyr Glu Asp Val Lys Asp Leu 265 270 Lys Thr Arg Arg Asn His Glu Gln Glu Gln Thr Phe Pro Gly Gly Gly 280 Ser Thr Ile Tyr Ser Met Ile Gln Ser Gln Ser Ser Ala Pro Thr Ser 295 300 Gln Glu Pro Ala Tyr Thr Leu Tyr Ser Leu Ile Gln Pro Ser Arg Lys

<210> 1468 <211> 57 <212> PRT

<213> Homo sapiens

<210> 1469 <211> 110 <212> PRT

<213> Homo sapiens

<400> 1469 Met Leu Glu Ile Leu Lys Leu Val Arg Leu Leu Thr Thr Gln Pro 5 10 Tyr Leu Thr Leu Phe Gln Ala Val Arg Asn Leu Ala Leu Asn Leu Ser 20 25 Thr Ser Ser Gly Ser Leu Gly Pro Ala Pro Gly Glu Pro Arg Ala Gly 40 Pro Leu Ala Pro Glu Gly Pro Arg Pro Leu Gly Ser Gly Pro Leu Gly 55 60 Pro Arg Gly Leu Arg Ala Ser Gly Arg Arg Arg Ala Ser Ser Gly Leu 70 75 Leu Leu Arg Tyr Cys Ala Ala Ala Gly Asp Thr Glu Phe Met Asp Ala 85 90 Pro Gly Gly Arg Thr Glu Gly Pro Gly Gly Leu Arg Pro

<210> 1470 <211> 59 <212> PRT <213> Homo sapiens

<400> 1470

<210> 1471 <211> 123 <212> PRT <213> Homo sapiens

<400> 1471 Met Met His Phe Leu Thr Gly Gly Trp Lys Val Leu Phe Ala Cys Val 10 Pro Pro Thr Glu Tyr Cys His Gly Trp Ala Cys Phe Gly Val Ser Ile Leu Val Ile Gly Leu Leu Thr Ala Leu Ile Gly Asp Leu Ala Ser His 40 Phe Gly Cys Thr Val Gly Leu Lys Asp Ser Val Asn Ala Val Val Phe 55 Val Ala Leu Gly Thr Ser Ile Pro Gly Asn Thr Leu Gly Asp Phe Gly 70 Gly Val Gly Ser Gln Met Ser Gln Ala Gly Ala Thr Gln Asp Pro Ala **`**85 90 Glu Met Arg His Val Arg Gln Gln Gly Gly Gly Ala Ala Gly Pro Val 105 Arg Arg Arg Val His Arg Glu Arg Asp Pro Leu 115

<210> 1472 <211> 316 <212> PRT <213> Homo sapiens

<400> 1472 Met Val Ser Ala Ser Gly Thr Ser Phe Phe Lys Gly Met Leu Leu Gly 10 Ser Ile Ser Trp Val Leu Ile Thr Met Phe Gly Gln Ile His Ile Arg 20 25 His Arg Gly Gln Thr Gln Asp His Glu His His His Leu Arg Pro Pro 40 Asn Arg Asn Asp Phe Leu Asn Thr Ser Lys Val Ile Leu Leu Glu Leu 55 Ser Lys Ser Ile Arg Val Phe Cys Ile Ile Phe Gly Glu Ser Glu Asp 70 75 Glu Ser Tyr Trp Ala Val Leu Lys Glu Thr Trp Thr Lys His Cys Asp 85 90 Lys Ala Glu Leu Tyr Asp Thr Lys Asn Asp Asn Leu Phe Asn Ile Glu 105 Ser Asn Asp Arg Trp Val Gln Met Arg Thr Ala Tyr Lys Tyr Val Phe

120 Glu Lys Asn Gly Asp Asn Tyr Asn Trp Phe Phe Leu Ala Leu Pro Thr 130 135 140 Thr Phe Ala Val Ile Glu Asn Leu Lys Tyr Leu Leu Phe Thr Arg Asp 150 155 160 Ala Ser Gln Pro Phe Tyr Leu Gly His Thr Val Ile Phe Gly Asp Leu 170 Glu Tyr Val Thr Val Glu Gly Gly Ile Val Leu Ser Arg Glu Leu Met 185 190 Lys Arg Leu Asn Arg Leu Leu Asp Asn Ser Glu Thr Cys Ala Asp Gln 195 . 200 205 Ser Val Ile Trp Lys Leu Ser Glu Asp Lys Gln Leu Ala Ile Cys Leu 215 220 Lys Tyr Ala Gly Val His Ala Glu Asn Ala Glu Asp Tyr Glu Gly Arg 230 235 Asp Val Phe Asn Thr Lys Pro Ile Ala Gln Leu Ile Glu Glu Ala Leu 245 250 Ser Asn Asn Pro Gln Gln Val Val Glu Gly Cys Cys Ser Asp Met Ala 260 265 Ile Thr Phe Asn Gly Leu Thr Pro Gln Lys Met Glu Val Met Met Tyr 280 285 Gly Leu Tyr Arg Leu Arg Ala Phe Gly His Tyr Phe Asn Asp Thr Leu 295 Val Phe Leu Pro Pro Val Gly Ser Glu Asn Asp \*

<210> 1473 <211> 65 <212> PRT

<213> Homo sapiens

<400> 1473

 Met Gln Cys
 Pro
 Pro
 Pro
 Phe
 Leu
 Gly
 Gln
 Trp
 Leu
 Cys
 Pro
 Ala

 1
 5
 5
 6ly
 Pro
 10
 10
 15
 15

 Ala
 Arg
 Gly
 Pro
 Gly
 Ser
 Pro
 Gly
 Pro
 Val
 Leu
 Val

 Pro
 Ala
 Gly
 Arg
 Arg
 Pro
 Pro
 Pro
 Arg
 Ser
 Gly
 Pro
 Gln
 Arg
 Arg
 Pro

 Ser
 Pro
 Ala
 Pro
 Val
 Arg
 Gly
 Pro
 Gln
 Phe
 His
 Ser
 Val
 Val
 Gly
 Pro

 50
 55
 55
 60
 64

<210> 1474 <211> 55

<212> PRT

<213> Homo sapiens

<400> 1474

 Met Ile Phe Met Arg Val Leu Met Leu Leu Cys Cys Met Asp Ser Leu

 1
 5
 10
 15

 Gly Ser Leu Asp Thr Phe Gln Trp Leu Ser Arg Val Leu Cys Pro Thr

 20
 25
 30

Glu Asn Leu Ile Phe Glu Leu Asn Gly Tyr Glu Leu Asn Ser Thr Trp

35 40 45

Phe Gly Trp Leu Asn Thr \*
50 54

<210> 1475

<211> 128

<212> PRT

<213> Homo sapiens

<221> misc\_feature

<222> (1) ... (128)

<223> Xaa = any amino acid or nothing

<400> 1475

Met Lys Phe Gln Leu Phe Leu Ser Tyr Val Phe Ile Thr Gln Val Phe 10 Ser Arg Pro Phe Gln Ser Asn Leu Gly Ser Leu Thr Pro Ala Ser Ser 20 25 Gln Ile Pro Leu Gln Leu Pro Lys Ala Leu Cys Val Arg Cys Leu Asn 40 Thr Val Xaa Xaa Xaa Xaa Thr Gly Phe Gly Lys Phe Gln Ile Thr Ile Gln Ser Pro Gly Gly Pro Leu Val Leu Ala Arg Pro Trp Ala Ser 70 Lys Phe Pro Ser Pro Lys Phe Xaa Xaa Xaa Xaa Xaa Pro Lys Met 85 90 Gly Gly Lys Thr Phe Ala Tyr Gly Arg Ile Asn Pro Thr Arg Pro Ala 100 105 Lys Asn Xaa Xaa Xaa Xaa Xaa Ser Leu Ala Ser Leu Asn Pro Thr 120

<210> 1476

<211> 210

<212> PRT

<213> Homo sapiens

<400> 1476

Met Tyr Phe Phe Leu Leu Leu Phe Phe Asn Val Gln Arg Leu Ala 5 10 Phe Pro Phe Gly Ile Pro Asn Asp Pro Met Leu Trp Ser Glu Gly Gln 20 25 Ser His Leu Cys Trp Arg Ser Pro Leu Ile Pro Ser Ala Gln Phe Arg 40 Gly Ser Arg Ala Asp Ile Arg Gly Ser Met Leu His Ser Ser Ser Gly 55 60 Arg Val Val Pro Leu Asn Pro Ala Thr Lys Leu Ser Pro Leu Glu Ser 70 Gln Met Ala Leu His Thr Lys Ala Val Glu Ala Gly Met Val Phe Gly 85 90 His Arg Ala Glu His Lys Asp Pro Arg Ser Val Trp Glu Ser Tyr Trp

100 105 Leu Leu Gly Ser Pro Trp Ala Glu Val Thr Arg Leu His Pro Arg Arg 115 120 Ala Gln Leu Gly Ser Leu Pro Pro Pro Asp Pro Arg Thr Thr His Arg 130 135 140 Arg Gly Ala Val Ser Ile Phe Leu Lys Gly Pro Phe Gly Asp Leu Val 150 155 Leu Ser Val Glu Arg Thr Asp Val Ala Leu Ser Ser Gln His Ile Pro 165 170 Gly Ser Gly Arg Pro Gln Leu Lys Gln Cys Gln Gly Pro Gln Gly Ser 185 His Leu Asp Arg Pro Thr Ala Cys Asn Ser Ala Leu Leu Arg Arg Gln 200 His \* 209

<210> 1477 <211> 57 <212> PRT <213> Homo sapiens

Val Val Gln Ile Tyr Phe Phe Pro \* 50 55 56

<210> 1478 <211> 97 <212> PRT <213> Homo sapiens

<400> 1478 Met Arg Ile Trp Ser Arg Ala Val Gly Asp Gly Pro Ala Ala Val Cys 10 Cys Pro Leu Arg Ser Trp Cys Leu Leu Leu Trp Ala Leu Asp Ser Leu 20 25 Asp Pro Ala Ala Val Thr Thr His Ala Ser Ala Met Leu Ser Gly Val 40 Phe Thr Pro Pro Phe Val Ser Ala Leu Pro Val Gln Trp Met Gln Met 55 Pro Val Leu Ser Phe Leu Ser Leu Thr Gly Ser Ser Val Tyr Val His 70 75 Met Ala Leu Leu Ser Gly His Gln Gly Ser Asp Thr Cys Ser Gly Leu 85 90

<210> 1479 <211> 113 <212> PRT <213> Homo sapiens

<400> 1479 Met Leu Ser Ile Ser Tyr Phe Ser Asn Ser Leu Met Leu Arg Leu Val 10 Pro Leu Ala Ala Tyr Val Leu Ser Tyr Leu Ile Cys Ser Val Leu Leu 20 25 His Ile Asn Gln Thr Thr Val Thr Thr Tyr Arg Gly Arg Lys Gln Arg 40 Lys Lys Ile Gln Phe Ala Thr Gly Asn His Gln Ser Ala Gln Ser Tyr 55 60 Ser Glu Leu Leu Ser Leu Ser Leu Ser Phe Ser Ser Leu Leu Ser Pro 70 75 Val Phe Ser Leu Pro Ser Trp Ser Leu Pro Ser Leu Pro Pro Phe Phe 85 90 Ser His Ser Pro His Gln Lys Gly Ile Met Met Val Pro Arg Ser Val 100 105 110

<210> 1480 <211> 91 <212> PRT <213> Homo sapiens

<210> 1481 <211> 54 <212> PRT <213> Homo sapiens

20 25 30

Phe Leu Ser Leu Arg Leu Glu Thr Leu Thr Phe Phe Val Leu Trp Leu
35 40 45

Val Pro Tyr Leu Ile \*
50 53

<210> 1482 <211> 56 <212> PRT <213> Homo sapiens

<210> 1483 <211> 202 <212> PRT <213> Homo sapiens

<400> 1483

Met Leu Leu Leu Gly Leu Cys Leu Gly Leu Ser Leu Cys Val Gly 10 Ser Gln Glu Glu Ala Gln Ser Trp Gly His Ser Ser Glu Gln Asp Gly 25 Leu Arg Val Pro Arg Gln Val Arg Leu Leu Gln Arg Leu Lys Thr Lys 40 Pro Leu Met Thr Glu Phe Ser Val Lys Ser Thr Ile Ile Ser Arg Tyr 55 60 Ala Phe Thr Thr Val Ser Cys Arg Met Leu Asn Arg Ala Ser Glu Asp 70 75 Gln Asp Ile Glu Phe Gln Met Gln Ile Pro Ala Ala Ala Phe Ile Thr 85 90 Asn Phe Thr Met Leu Ile Gly Asp Lys Val Tyr Gln Gly Glu Ile Thr 105 Glu Arg Glu Lys Lys Ser Gly Asp Arg Val Lys Glu Lys Arg Asn Lys Thr Thr Glu Glu Asn Gly Glu Lys Gly Thr Glu Ile Phe Arg Ala Ser 135 140 Ala Val Ile Pro Ser Lys Asp Lys Ala Ala Phe Phe Leu Ser Tyr Glu 155 150 Glu Leu Leu Gln Arg Arg Leu Gly Lys Tyr Glu His Ser Ile Ser Val 165 170 Arg Pro Gln Gln Leu Ser Gly Arg Leu Ser Val Asp Val Asn Ile Leu 185 Glu Ser Ala Gly Ile Ala Ser Leu Glu Val

<210> 1484 <211> 477 <212> PRT <213> Homo sapiens

<400> 1484 Met Pro Gln Leu Ser Leu Ser Trp Leu Gly Leu Gly Gln Val Ala Ala 10 Phe Pro Trp Leu Leu Leu Leu Ala Gly Ala Ser Arg Leu Leu Ala 20 Gly Phe Leu Ala Trp Thr Tyr Ala Phe Tyr Asp Asn Cys Arg Arg Leu 40 Gln Tyr Phe Pro Gln Pro Pro Lys Gln Lys Trp Phe Trp Gly Gln Pro 55 Gly Pro Pro Ala Ile Ala Pro Lys Asp Asp Leu Ser Ile Arg Phe Leu 75 Lys Pro Trp Leu Gly Glu Gly Ile Leu Leu Ser Gly Gly Asp Lys Trp Ser Arg His Arg Arg Met Leu Thr Pro Ala Phe His Phe Asn Ile Leu 100 105 Lys Ser Tyr Ile Thr Ile Phe Asn Lys Ser Ala Asn Ile Met Leu Asp 120 Lys Trp Gln His Leu Ala Ser Glu Gly Ser Ser Cys Leu Asp Met Phe 135 140 Glu His Ile Ser Leu Met Thr Leu Asp Ser Leu Gln Lys Cys Ile Phe 150 155 Ser Phe Asp Ser His Cys Gln Glu Arg Pro Ser Glu Tyr Ile Ala Thr 165 170 Ile Leu Glu Leu Ser Ala Leu Val Glu Lys Arg Ser Gln His Ile Leu 185 Gln His Met Asp Phe Leu Tyr Tyr Leu Ser His Asp Gly Arg Arg Phe 200 205 His Arg Ala Cys Arg Leu Val His Asp Phe Thr Asp Ala Val Ile Arg 215 Glu Arg Arg Arg Thr Leu Pro Thr Gln Gly Ile Asp Asp Phe Phe Lys 230 235 Asp Lys Ala Lys Ser Lys Thr Leu Asp Phe Ile Asp Val Leu Leu 250 Ser Lys Asp Glu Asp Gly Lys Ala Leu Ser Asp Glu Asp Ile Arg Ala 265 Glu Ala Asp Thr Phe Met Phe Gly Gly His Asp Thr Thr Ala Ser Gly 280 Leu Ser Trp Val Leu Tyr Asn Leu Ala Arg His Pro Glu Tyr Gln Glu 295 300 Arg Cys Arg Gln Glu Val Gln Glu Leu Leu Lys Asp Arg Asp Pro Lys 310 315 Glu Ile Glu Trp Asp Asp Leu Ala Gln Leu Pro Phe Leu Thr Met Cys 330 Val Lys Glu Ser Leu Arg Leu His Pro Pro Ala Pro Phe Ile Ser Arg 345 Cys Cys Thr Gln Asp Ile Val Leu Pro Asp Gly Arg Val Ile Pro Lys 355 360 Gly Ile Thr Cys Leu Ile Asp Ile Ile Gly Val His His Asn Pro Thr 375 380 Val Trp Pro Asp Pro Glu Val Tyr Asp Pro Phe Arg Phe Asp Pro Glu

<210> 1485 <211> 67 <212> PRT

<213> Homo sapiens

<210> 1486 <211> 93 <212> PRT <213> Homo sapiens

65 66

<400> 1486 Met Gly Ser Ser Val Leu Ser Ile Trp Ile Leu Ser Pro Ser Ile Tyr 5 10 Pro Ile Leu Ser Pro Leu Ala Met Pro Cys Leu Ser Arg Thr Asp Leu 20 25 Ile Arg Val Arg Arg Ile Gln Gly Ala Trp Pro Ser Glu Gly Thr Ala 40 45 Ser Ser Ile Arg Gly Trp Val Leu Thr Lys Leu Arg Met Ser Ser Gly Lys Ala Leu Glu Ala Leu Tyr Cys Ile Pro Gly Ala Ala Gln His Pro 70 75 Gly Leu Gly Val Thr Arg Val Trp Ser Gly Arg Thr \* 85. 90

<210> 1487 <211> 88 <212> PRT

## <213> Homo sapiens

 <4400> 1487

 Met Gln Lys Val Thr Leu Gly Leu Leu Leu Val Phe Leu Ala Gly Phe Pro 1

 1
 5
 5
 10
 15
 15

 Val Leu Asp Asp Ala Asn Asp Leu Glu Asp Lys Asn Ser Pro Phe Tyr Tyr 20
 25
 30
 30

 Asp Trp His Ser Leu Gln Val Gly Gly Leu Ile Cys Ala Gly Val Leu 35
 40
 45
 45

 Cys Ala Met Gly Ile Ile Ile Val Met Ser Ala Lys Cys Lys Cys Lys 50
 55
 60
 60

 Phe Gly Gln Lys Ser Gly His His Pro Gly Glu Thr Pro Pro Leu Ile 65
 70
 75
 80

 Thr Pro Gly Ser Ala Gln Ser \*
 87

<210> 1488 <211> 268 <212> PRT <213> Homo sapiens

<400> 1488 Met Gly Ser Ala Cys Ile Lys Val Thr Lys Tyr Phe Leu Phe Leu Phe Asn Leu Ile Phe Phe Ile Leu Gly Ala Val Ile Leu Gly Phe Gly Val 25 Trp Ile Leu Ala Asp Lys Ser Ser Phe Ile Ser Val Leu Gln Thr Ser 40 Ser Ser Ser Leu Arg Met Gly Ala Tyr Val Phe Ile Gly Val Gly Ala 55 Val Thr Met Leu Met Gly Phe Leu Gly Cys Ile Gly Ala Val Asn Glu 70 75 Val Arg Cys Leu Leu Gly Leu Tyr Phe Ala Phe Leu Leu Leu Ile Leu 85 90 Ile Ala Gln Val Thr Ala Gly Ala Leu Phe Tyr Phe Asn Met Gly Lys 105 Leu Lys Gln Glu Met Gly Gly Ile Val Thr Glu Leu Ile Arg Asp Tyr 120 Asn Ser Ser Arg Glu Asp Ser Leu Gln Asp Ala Trp Asp Tyr Val Gln 135 140 Ala Gln Val Lys Cys Cys Gly Trp Val Ser Phe Tyr Asn Trp Thr Asp 155 150 Asn Ala Glu Leu Met Asn Arg Pro Glu Val Thr Tyr Pro Cys Ser Cys 170 165 Glu Val Lys Gly Glu Glu Asp Asn Ser Leu Ser Val Arg Lys Gly Phe 185 Cys Glu Ala Pro Gly Asn Arg Thr Gln Ser Gly Asn His Pro Glu Asp 200 Trp Pro Val Tyr Gln Glu Gly Cys Met Glu Lys Val Gln Ala Trp Leu 220 215 Gln Glu Asn Leu Gly Ile Ile Leu Gly Val Gly Val Gly Val Ala Ile 235 230 Ile Glu Leu Leu Gly Met Val Leu Ser Ile Cys Leu Cys Arg His Val 245 250 His Ser Glu Asp Tyr Ser Lys Val Pro Lys Tyr \*

260 265 267

<210> 1489 <211> 832

<212> PRT

<213> Homo sapiens

<400> 1489

Met Thr Leu Ala Leu Ala Tyr Leu Leu Ala Leu Pro Gln Val Leu Asp 10 Ala Asn Arg Cys Phe Glu Lys Gln Ser Pro Ser Ala Leu Ser Leu Gln 20 25 Leu Ala Ala Tyr Tyr Tyr Ser Leu Gln Ile Tyr Ala Arg Leu Ala Pro 40 Cys Phe Arg Asp Lys Cys His Pro Leu Tyr Arg Ala Asp Pro Lys Glu 55 Leu Ile Lys Met Val Thr Arg His Val Thr Arg His Glu His Glu Ala 70 75 Trp Pro Glu Asp Leu Ile Ser Leu Thr Lys Gln Leu His Cys Tyr Asn 85 90 Glu Arg Leu Leu Asp Phe Thr Gln Ala Gln Ile Leu Gln Gly Leu Arg 105 Lys Gly Val Asp Val Gln Arg Phe Thr Ala Asp Asp Gln Tyr Lys Arg 120 125 Glu Thr Ile Leu Gly Leu Ala Glu Thr Leu Glu Glu Ser Val Tyr Ser 130 135 140 Ile Ala Ile Ser Leu Ala Gln Arg Tyr Ser Val Ser Arg Trp Glu Val 150 155 Phe Met Thr His Leu Glu Phe Leu Phe Thr Asp Ser Gly Leu Ser Thr 170 Leu Glu Ile Glu Asn Arg Ala Gln Asp Leu His Leu Phe Glu Thr Leu 185 180 190 Lys Thr Asp Pro Glu Ala Phe His Gln His Met Val Lys Tyr Ile Tyr 200 205 Pro Thr Ile Gly Gly Phe Asp His Glu Arg Leu Gln Tyr Tyr Phe Thr 215 220 Leu Leu Glu Asn Cys Gly Cys Ala Asp Leu Gly Asn Cys Ala Ile Lys 230 235 Pro Glu Thr His Ile Arg Leu Leu Lys Lys Phe Lys Val Val Ala Ser 245 250 255 Gly Leu Asn Tyr Lys Lys Leu Thr Asp Glu Asn Met Ser Pro Leu Glu 260 265 270 Ala Leu Glu Pro Val Leu Ser Ser Gln Asn Ile Leu Ser Ile Ser Lys 280 Leu Val Pro Lys Ile Pro Glu Lys Asp Gly Gln Met Leu Ser Pro Ser 295 Ser Leu Tyr Thr Ile Trp Leu Gln Lys Leu Phe Trp Thr Gly Asp Pro 310 315 His Leu Ile Lys Gln Val Pro Gly Ser Ser Pro Glu Trp Leu His Ala 325 330 Tyr Asp Val Cys Met Lys Tyr Phe Asp Arg Leu His Pro Gly Asp Leu 340 345 Ile Thr Val Val Asp Ala Val Thr Phe Ser Pro Lys Ala Val Thr Lys 360 Leu Ser Val Glu Ala Arg Lys Glu Met Thr Arg Lys Ala Ile Lys Thr

375

```
Val Lys His Phe Ile Glu Lys Pro Arg Lys Arg Asn Ser Glu Asp Glu
                   390
                                      395
Ala Gln Glu Ala Lys Asp Ser Lys Val Thr Tyr Ala Asp Thr Leu Asn
               405
                                  410
His Leu Glu Lys Ser Leu Ala His Leu Glu Thr Leu Ser His Ser Phe
                              425
           420
Ile Leu Ser Leu Lys Asn Ser Glu Gln Glu Thr Leu Gln Lys Tyr Ser
                          440
His Leu Tyr Asp Leu Ser Arg Ser Glu Lys Glu Lys Leu His Asp Glu
                      455
                                          460
Ala Val Ala Ile Cys Leu Asp Gly Gln Pro Leu Ala Met Ile Gln Gln
                  470
                                      475
Leu Leu Glu Val Ala Val Gly Pro Leu Asp Ile Ser Pro Lys Asp Ile
                                  490
Val Gln Ser Ala Ile Met Lys Ile Ile Ser Ala Leu Ser Gly Gly Ser
                              505
Ala Asp Leu Gly Gly Pro Arg Asp Pro Leu Lys Val Leu Glu Gly Val
                         520
                                              525
Val Ala Ala Val His Ala Ser Val Asp Lys Gly Glu Glu Leu Val Ser
                      535
                                         540
Pro Glu Asp Leu Leu Glu Trp Leu Arg Pro Phe Cys Ala Asp Asp Ala
                                     555
                  550
Trp Pro Val Arg Pro Arg Ile His Val Leu Gln Ile Leu Gly Gln Ser
               565
                                  570
Phe His Leu Thr Glu Glu Asp Ser Lys Leu Leu Val Phe Phe Arg Thr
           580
                               585
Glu Ala Ile Leu Lys Ala Ser Trp Pro Gln Arg Gln Val Asp Ile Ala
                         600
Asp Ile Glu Asn Glu Glu Asn Arg Tyr Cys Leu Phe Met Glu Leu Leu
                      615
                                          620
Glu Ser Ser His His Glu Ala Glu Phe Gln His Leu Val Leu Leu
                  630
                                     635
Gln Ala Trp Pro Pro Met Lys Ser Glu Tyr Val Ile Thr Asn Asn Pro
                                 650
            645
Trp Val Arg Leu Ala Thr Val Met Leu Thr Arg Cys Thr Met Glu Asn
          660
                              665
Lys Glu Gly Leu Gly Asn Glu Val Leu Lys Met Cys Arg Ser Leu Tyr
                          680
Asn Thr Lys Gln Met Leu Pro Ala Glu Gly Val Lys Glu Leu Cys Leu
                       695
                                           700
Leu Leu Leu Asn Gln Ser Leu Leu Leu Pro Ser Leu Lys Leu Leu Leu
                   710
                                      715
Glu Ser Arg Asp Glu His Leu His Glu Met Ala Leu Glu Gln Ile Thr
                                  730
               725
Ala Val Thr Thr Val Asn Asp Ser Asn Cys Asp Gln Glu Leu Leu Ser
                               745
Leu Leu Leu Asp Ala Lys Leu Leu Val Lys Cys Val Ser Thr Pro Phe
                           760
Tyr Pro Arg Ile Val Asp His Leu Leu Ala Ser Leu Gln Gln Gly Arg
                       775
                                          780
Trp Asp Ala Glu Glu Leu Gly Arg His Leu Arg Glu Ala Gly His Glu
                  790
                                      795
Ala Glu Ala Gly Ser Leu Leu Leu Ala Val Arg Gly Thr His Gln Ala
               805
                                  810
Phe Arg Thr Phe Ser Thr Ala Leu Arg Ala Ala Gln His Trp Val *
                              825
```

<210> 1490 <211> 55 <212> PRT <213> Homo sapiens

Thr Ser Glu Trp Ile Phe \* 50 54

<210> 1491 <211> 134 <212> PRT <213> Homo sapiens

<400> 1491 Met Thr Thr Thr Phe Pro Pro Arg Lys Met Val Ala Gln Phe Leu Leu 10 Val Ala Gly Asn Val Ala Asn Ile Thr Thr Val Ser Leu Trp Glu Glu 25 Phe Ser Ser Ser Asp Leu Ala Asp Leu Arg Phe Leu Asp Met Ser Gln 40 45 Asn Gln Phe Gln Tyr Leu Pro Asp Gly Phe Leu Arg Lys Met Pro Ser 55 60 Leu Ser His Leu Asn Leu His Gln Asn Cys Leu Met Thr Leu His Ile . 70 . 75 Arg Glu His Glu Pro Pro Gly Ala Leu Thr Glu Leu Asp Leu Ser His 85 90 Asn Gln Leu Ser Glu Leu His Leu Ala Pro Gly Leu Ala Ser Cys Leu 100 105 110 Gly Ser Leu Arg Leu Phe Asn Leu Ser Ser Asn Gln Leu Leu Gly Val 115 120 125

<210> 1492 <211> 71 <212> PRT <213> Homo sapiens

Pro Pro Gly Pro Leu Tyr

130

Cys Glu Ser Ile Lys Pro Leu Phe Leu Ile Asn Tyr Pro Val Ser Asn 50 55 60

Lys Ser Leu Leu Ala Thr \*
65 70

<210> 1493
<211> 78
<212> PRT
<213> Homo sapiens

<210> 1494 <211> 121 <212> PRT <213> Homo sapiens

<400> 1494 Met Ala Gly Leu Asn Cys Gly Val Ser Ile Ala Leu Leu Gly Val Leu 5 10 Leu Leu Gly Ala Ala Arg Leu Pro Arg Gly Ala Glu Ala Phe Glu Ile 20 25 Ala Leu Pro Arg Glu Ser Asn Ile Thr Val Leu Ile Lys Leu Gly Thr 40 Pro Thr Leu Leu Ala Lys Pro Cys Tyr Ile Val Ile Ser Lys Arg His 55 Ile Thr Met Leu Ser Ile Lys Ser Gly Glu Arg Ile Val Phe Thr Phe 70 Ser Cys Gln Ser Pro Glu Asn His Phe Val Ile Glu Ile Gln Lys Asn 90 Ile Asp Cys Met Ser Gly Pro Cys Pro Phe Gly Glu Val Gln Leu Gln 100 105 Pro Ser Thr Ser Leu Leu Pro Thr Leu 120 121

<210> 1495 <211> 91 <212> PRT <213> Homo sapiens

<400> 1495 Met Glu Asn Cys Val Gly Glu Arg Thr His Pro Leu Phe Val Val Tyr 5 10 Leu Ala Leu Gln Leu Val Val Leu Leu Trp Gly Leu Tyr Leu Ala Trp 20 25 Ser Gly Leu Arg Phe Phe Gln Pro Trp Gly Leu Trp Leu Arg Ser Ser 40 Gly Leu Leu Phe Ala Thr Phe Gln Leu Leu Ser Leu Phe Ser Leu Val 55 60 Ala Ser Leu Leu Val Ser His Leu Tyr Leu Val Ala Ser Asn Thr 70 Thr Thr Trp Glu Phe Ile Ser Ser His His Val 85

<210> 1496 <211> 72 <212> PRT <213> Homo sapiens

<210> 1497 <211> 196 <212> PRT <213> Homo sapiens

(213) HOMO Saptems

<400> 1497 Met Ala Pro Arg Ala Leu Pro Gly Ser Ala Val Leu Ala Ala Val 10 Phe Val Gly Gly Ala Val Ser Ser Pro Leu Val Ala Pro Asp Asn Gly 20 25 Ser Ser Arg Thr Leu His Ser Arg Thr Glu Thr Thr Pro Ser Pro Ser 40 Asn Asp Thr Gly Asn Gly His Pro Glu Tyr Ile Ala Tyr Ala Leu Val 55 Pro Val Phe Phe Ile Met Gly Leu Phe Gly Val Leu Ile Cys His Leu 70 75 Leu Lys Lys Gly Tyr Arg Cys Thr Thr Glu Ala Glu Gln Asp Ile 85 90 Glu Glu Glu Lys Val Glu Lys Ile Glu Leu Asn Asp Ser Val Asn Glu 105 Asn Ser Asp Thr Val Gly Gln Ile Val His Tyr Ile Met Lys Asn Glu 120

<210> 1498 <211> 75 <212> PRT <213> Homo sapiens

<210> 1499 <211> 62 <212> PRT <213> Homo sapiens

<210> 1500 <211> 138 <212> PRT <213> Homo sapiens

 $<\!\!400\!\!> 1500$  Met Pro Ile Trp Lys Pro Phe Met Ala Trp Met Ala Ala Trp Ala Leu

10 5 Ala Val Leu Ser Lys Leu Thr Lys Pro Ile His Leu Leu Trp Met Val 25 Ala Arg Ser Ile Asn Thr Leu Glu Glu Met Ile Leu Pro Lys Gly Thr 40 Asn Ile Cys Val Ser Ser Val Ser Pro Asn Ser Phe Ser Leu Leu Leu 55 Leu Gln Glu Gly Arg Arg Leu Glu Asp Ala Val Arg Asp Gly Arg Asp 70 75 Gly Arg Gly Gly Ala His Gly Cys Val Leu Leu Asp Ser Gly Glu Gly 90 Arg Met Gln Cys Leu Gly His Ser Arg Ala Leu Ser Trp Val Trp His 100 105 Lys Ala Ile Gly Ile Asp Glu Phe Pro Gly Gln Gly Ala His Leu Glu 115 120 Arg Ala Arg His Leu Pro Ser His Trp \* 135 137

<210> 1501 <211> 82 <212> PRT <213> Homo sapiens

<400> 1501

Met Ile Leu Phe Thr Arg Ala Trp Phe Glu Leu Val Thr Leu Val Gln 10 Phe Ile Ile Gly Ser Gln Met Leu Tyr Pro Tyr Leu His Ile Glu Glu 20 25 30 Phe Val Ile Arg Lys Leu Pro Val Leu Leu Tyr Arg Lys Ser Val Ile 40 45 Arg Tyr Gln Met Ala Ser Ser Pro Cys Leu Gln Met Phe Lys Gln Tyr 55 Cys Gly Trp Ser Arg Lys Ser Leu Arg His Ala Val Lys Cys Arg Ala 65 70 Arg 81

<210> 1502 <211> 54 <212> PRT <213> Homo sapiens

<400> 1502

<210> 1503 <211> 62 <212> PRT <213> Homo sapiens

Ser Trp Ile Ala Ser Leu His Lys Tyr Val Ile Ser Gln \* 50 55 60 61

<210> 1504 <211> 46 <212> PRT <213> Homo sapiens

<210> 1505 <211> 48 <212> PRT <213> Homo sapiens

<210> 1506 <211> 190 <212> PRT <213> Homo sapiens

<400> 1506
Met Trp Leu Leu Gly Pro Leu Cys Leu Leu Leu Ser Ser Ala Ala Glu

Ser Gln Leu Leu Pró Gly Asn Asn Phe Thr Asn Glu Cys Asn Ile Pro 20 25 Gly Asn Phe Val Cys Ser Asn Gly Arg Cys Ile Pro Gly Ala Trp Gln 40 Cys Asp Gly Leu Pro Asp Cys Phe Asp Lys Ser Asp Glu Lys Glu Cys Pro Lys Ala Lys Ser Lys Cys Gly Pro Thr Phe Phe Pro Cys Ala Ser 70 75 Gly Ile His Cys Ile Ile Gly Arg Phe Arg Cys Asn Gly Phe Glu Asp 85 90 Cys Pro Asp Gly Ser Asp Glu Glu Asn Cys Thr Ala Asn Pro Leu Leu 105 100 Cys Ser Thr Ala Arg Tyr His Cys Lys Asn Gly Leu Cys Ile Asp Lys 120 125 Ser Phe Ile Cys Asp Gly Gln Asn Asn Cys Gln Asp Asn Ser Asp Glu 135 Glu Ser Cys Glu Ser Ser Gln Val Phe Arg Pro Gln Val Ser Glu Trp 150 155 Gln Ala Arg Pro Arg Asp Leu Cys Ala Arg Trp Asn Ile Pro Phe Leu 170 165 Gly Arg Leu Glu Arg Pro Trp Ser Phe Thr Ser Ser Gln Gln · 185

<210> 1507 <211> 60 <212> PRT <213> Homo sapiens

<210> 1508 <211> 48 <212> PRT <213> Homo sapiens

<210> 1509 <211> 85 <212> PRT <213> Homo sapiens

<400> 1509

 Met
 Thr
 Gly
 Ser
 Arg
 Cys
 Glu
 Glu
 His
 Val
 Phe
 Ser
 Gln
 Gln
 Pro

 1
 5
 6
 10
 10
 10
 10
 15
 15

 Gly
 His
 Ile
 Leu
 Ile
 Pro
 Leu
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<210> 1510 <211> 55 <212> PRT <213> Homo sapiens

Cys Leu Pro Lys Cys Cys \* 50 54

<210> 1511 <211> 108 <212> PRT <213> Homo sapiens

85 90 95 Gly Gln Arg Gly Pro Arg Glu Glu Met Arg Gly \* 100 105 107

<210> 1512 <211> 119 <212> PRT

<213> Homo sapiens

<400> 1512 Met Val Ala Arg Val Trp Ser Leu Met Arg Phe Leu Ile Lys Gly Ser Val Ala Gly Gly Ala Val Tyr Leu Val Tyr Asp Gln Glu Leu Leu Gly 20 25 Pro Ser Asp Lys Ser Gln Ala Ala Leu Gln Lys Ala Gly Glu Val Val 35 40 Pro Pro Ala Met Tyr Gln Phe Ser Gln Tyr Val Cys Gln Gln Thr Gly 55 60 Leu Gln Ile Pro Gln Leu Pro Ala Pro Pro Lys Ile Tyr Phe Pro Ile 70 Arg Asp Ser Trp Asn Ala Gly Ile Met Thr Val Met Ser Ala Leu Ser 85 90 Val Ala Pro Ser Lys Ala Arg Glu Tyr Ser Lys Glu Gly Trp Glu Tyr 100 105 Val Lys Ala Arg Thr Lys \*

<210> 1513 <211> 973 <212> PRT <213> Homo sapiens

<400> 1513 Met Val Lys Ser Lys Trp Gly Leu Ala Leu Ala Ala Val Val Thr Val 10 Leu Ser Ser Leu Leu Met Ser Val Gly Leu Cys Thr Leu Phe Gly Leu 25 Thr Pro Thr Leu Asn Gly Gly Glu Ile Phe Pro Tyr Leu Val Val Val 40 Ile Gly Leu Glu Asn Val Leu Val Leu Thr Lys Ser Val Val Ser Thr Pro Val Asp Leu Glu Val Lys Leu Arg Ile Ala Gln Gly Leu Ser Ser 70 75 Glu Ser Trp Ser Ile Met Lys Asn Met Ala Thr Glu Leu Gly Ile Ile 85 90 Leu Ile Gly Tyr Phe Thr Leu Val Pro Ala Ile Gln Glu Phe Cys Leu 105 Phe Ala Val Val Gly Leu Val Ser Asp Phe Phe Leu Gln Met Leu Phe 120 125 Phe Thr Thr Val Leu Ser Ile Asp Ile Arg Arg Met Glu Leu Ala Asp 135 140 Leu Asn Lys Arg Leu Pro Pro Glu Ala Cys Leu Pro Ser Ala Lys Pro 155 150

Val Gly Gln Pro Thr Arg Tyr Glu Arg Gln Leu Ala Val Arg Pro Ser 170 Thr Pro His Thr Ile Thr Leu Gln Pro Ser Ser Phe Arg Asn Leu Arg 185 Leu Pro Lys Arg Leu Arg Val Val Tyr Phe Leu Ala Arg Thr Arg Leu 200 Ala Gln Arg Leu Ile Met Ala Gly Thr Val Val Trp Ile Gly Ile Leu 215 220 Val Tyr Thr Asp Pro Ala Gly Leu Arg Asn Tyr Leu Ala Ala Gln Val 230 235 Thr Glu Gln Ser Pro Leu Gly Glu Gly Ala Leu Ala Pro Met Pro Val 245 250 Pro Ser Gly Met Leu Pro Pro Ser His Pro Asp Pro Ala Phe Ser Ile 265 Phe Pro Pro Asp Ala Pro Lys Leu Pro Glu Asn Gln Thr Ser Pro Gly 280 Glu Ser Pro Glu Arg Gly Gly Pro Ala Glu Val Val His Asp Ser Pro 295 300 Val Pro Glu Val Thr Trp Gly Pro Glu Asp Glu Glu Leu Trp Arg Lys 310 315 Leu Ser Phe Arg His Trp Pro Thr Leu Phe Ser Tyr Tyr Asn Ile Thr 325 330 Leu Ala Lys Arg Tyr Ile Ser Leu Leu Pro Val Ile Pro Val Thr Leu 345 Arg Leu Asn Pro Arg Glu Ala Leu Glu Gly Arg His Pro Gln Asp Gly 360 Arg Ser Ala Trp Pro Pro Pro Gly Pro Ile Pro Ala Gly His Trp Glu 375 380 Ala Gly Pro Lys Gly Pro Gly Gly Val Gln Ala His Gly Asp Val Thr 390 395 Leu Tyr Lys Val Ala Ala Leu Gly Leu Ala Thr Gly Ile Val Leu Val 405 410 Leu Leu Leu Cys Leu Tyr Arg Val Leu Cys Pro Arg Asn Tyr Gly 425 Gln Leu Gly Gly Pro Gly Arg Arg Arg Gly Glu Leu Pro Cys 440 Asp Asp Tyr Gly Tyr Ala Pro Pro Glu Thr Glu Ile Val Pro Leu Val Leu Arg Gly His Leu Met Asp Ile Glu Cys Leu Ala Ser Asp Gly Met 470 475 Leu Leu Val Ser Cys Cys Leu Ala Gly His Val Cys Val Trp Asp Ala 485 490 Gln Thr Gly Asp Cys Leu Thr Arg Ile Pro Arg Pro Gly Arg Gln Arg 505 Arg Asp Ser Gly Val Gly Ser Gly Leu Glu Ala Gln Glu Ser Trp Glu 520 Arg Leu Ser Asp Gly Gly Lys Ala Gly Pro Glu Glu Pro Gly Asp Ser 535 540 Pro Pro Leu Arg His Arg Pro Arg Gly Pro Pro Pro Pro Ser Leu Phe 550 555 Gly Asp Gln Pro Asp Leu Thr Cys Leu Ile Asp Thr Asn Phe Ser Ala 570 Gln Pro Arg Ser Ser Gln Pro Thr Gln Pro Glu Pro Arg His Arg Ala 585 Val Cys Gly Arg Ser Arg Asp Ser Pro Gly Tyr Asp Phe Ser Cys Leu 600 Val Gln Arg Val Tyr Gln Glu Glu Gly Leu Ala Ala Val Cys Thr Pro 615 620 Ala Leu Arg Pro Pro Ser Pro Gly Pro Val Leu Ser Gln Ala Pro Glu

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630
                               635
Asp Glu Gly Gly Ser Pro Glu Lys Gly Ser Pro Ser Leu Ala Trp Ala
            645 650 655
Pro Ser Ala Glu Gly Ser Ile Trp Ser Leu Glu Leu Gln Gly Asn Leu
                        665 670
         660
Ile Val Val Gly Arg Ser Ser Gly Arg Leu Glu Val Trp Asp Ala Ile
                     680
Glu Gly Val Leu Cys Cys Ser Ser Glu Glu Val Ser Ser Gly Ile Thr
                695
Ala Leu Val Phe Leu Asp Lys Arg Ile Val Ala Ala Arg Leu Asn Gly
705 710
                               715
Ser Leu Asp Phe Phe Ser Leu Glu Thr His Thr Ala Leu Ser Pro Leu
                         730 735
           725
Gln Phe Arg Gly Thr Pro Gly Arg Gly Ser Ser Pro Ala Ser Pro Val
        740
                        745
Tyr Ser Ser Ser Asp Thr Val Ala Cys His Leu Thr His Thr Val Pro
                     760
                               765
Cys Ala His Gln Lys Pro Ile Thr Ala Leu Lys Ala Ala Ala Gly Arg
                  775
Leu Val Thr Gly Ser Gln Asp His Thr Leu Arg Val Phe Arg Leu Glu
            790
                             795
Asp Ser Cys Cys Leu Phe Thr Leu Gln Gly His Ser Gly Ala Ile Thr
           805 810 815
Thr Val Tyr Ile Asp Gln Thr Met Val Leu Ala Ser Gly Gly Gln Asp
                         825 . 830
Gly Ala Ile Cys Leu Trp Asp Val Leu Thr Gly Ser Arg Val Ser His
   835 840
Val Phe Ala His Arg Gly Asp Val Thr Ser Leu Thr Cys Thr Thr Ser
  850 855 860
Cys Val Ile Ser Ser Gly Leu Asp Asp Leu Ile Ser Ile Trp Asp Arg
             870
                             875 ·
Ser Thr Gly Ile Lys Phe Tyr Ser Ile Gln Gln Asp Leu Gly Cys Gly
            885 890
Ala Ser Leu Gly Val Ile Ser Asp Asn Leu Leu Val Thr Gly Gly Gln
  900
                        905 910
Gly Cys Val Ser Phe Trp Asp Leu Asn Tyr Gly Asp Leu Leu Gln Thr
                     920
                                     925
Val Tyr Leu Gly Lys Asn Ser Glu Ala Gln Pro Ala Arg Gln Ile Leu
                  935
                                  940
Val Leu Asp Asn Ala Ala Ile Val Cys Asn Phe Gly Ser Glu Leu Ser
945 950
                    . 955
Leu Val Tyr Val Pro Ser Val Leu Glu Lys Leu Asp *
            965
                            970 972
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<210> 1514 <211> 77 <212> PRT <213> Homo sapiens

Asn Leu Ile Ile Asp Ser Ser Leu Lys Ile Leu Ser Gln Glu Pro Ser
50 55 60
Asn Leu Trp Gln Arg Ile Pro Lys Met Met Thr Thr \*
65 70 75 .76

<210> 1515 <211> 148 <212> PRT <213> Homo sapiens

<400> 1515 Met Leu Gly Ser Arg Leu Met Thr Leu Thr Val Cys Ala Gly Ala Leu 10 Ala Arg Gly Arg Gly Thr Gly Thr Cys Glu Thr Arg Gln Glu Gly Lys 25 Gly Gln Asn His Ser Thr Leu Ala Trp Pro His Glu Glu Pro Gly Ala 40 Ser Thr Gly Arg Asp Gly Gly Lys Leu Pro Arg Gly Gln Cys Leu Leu. 55 60 Glu Lys Gly Pro Gly Gly Ala Gly Asp Lys Val Ser Lys Ile Phe Pro Ser Cys Ala Leu Ala Leu Leu Leu Ser Leu Ala Asn Pro Gly Pro Arg Gly Pro Arg Glu Phe His Leu Cys Trp Gly Trp Leu Asp Arg Gly Val 100 105 Thr Gln Glu Ala Val His Val Gly Glu Lys Arg Gly Gly Leu Gly Ser 120 Gly Arg Lys Gly Gly Trp Trp Pro Gly Trp Asp Pro Gly Cys Arg Asp 130 Val Ile Thr \* 145 147

<210> 1516 <211> 274 <212> PRT <213> Homo sapiens

<400> 1516 Met Arg Gly Ser Gln Glu Val Leu Leu Met Trp Leu Leu Val Leu Ala 10 Val Gly Gly Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val Cys Ala 20 25 Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val Gln Arg Val 40 Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg Ala Cys Ser Thr 55 60 Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg Ser Pro Gly Leu Ala 75 Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro Gly Trp Lys Arg Thr Ser 90 Gly Leu Pro Gly Ala Cys Gly Ala Ala Ile Cys Gln Pro Pro Cys Arg 100 105 Asn Gly Gly Ser Cys Val Gln Pro Gly Arg Cys Arg Cys Pro Ala Gly

120 115 Trp Arg Gly Asp Thr Cys Gln Ser Asp Val Asp Glu Cys Ser Ala Arg 135 140 Arg Gly Gly Cys Pro Gln Arg Cys Val Asn Thr Ala Gly Ser Tyr Trp 150 155 Cys Gln Cys Trp Glu Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys 170 Val Pro Lys Gly Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val 185 - 190 Asp Ser Ala Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp . 200 205 Leu Leu Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu 220 215 Ala Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu 230 235 Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu Gln 250 Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys Lys Asp 265 Ser \* 273

<210> 1517 <211> 246 <212> PRT

<213> Homo sapiens

<400> 1517

Met Thr Leu Phe Pro Val Leu Leu Phe Leu Val Ala Gly Leu Leu Pro 10 Ser Phe Pro Ala Asn Glu Asp Lys Asp Pro Ala Phe Thr Ala Leu Leu 20 25 Thr Thr Gln Thr Gln Val Gln Arg Glu Ile Val Asn Lys His Asn Glu 40 45 Leu Arg Arg Ala Val Ser Pro Pro Ala Arg Asn Met Leu Lys Met Glu 55 Trp Asn Lys Glu Ala Ala Ala Asn Ala Gln Lys Trp Ala Asn Gln Cys 70 75 Asn Tyr Arg His Ser Asn Pro Lys Asp Arg Met Thr Ser Leu Lys Cys 85 90 Gly Glu Asn Leu Tyr Met Ser Ser Ala Ser Ser Ser Trp Ser Gln Ala 100 105 Ile Gln Ser Trp Phe Asp Glu Tyr Asn Asp Phe Asp Phe Gly Val Gly 120 Pro Lys Thr Pro Asn Ala Val Val Gly His Tyr Thr Gln Val Val Trp 135 140 Tyr Ser Ser Tyr Leu Val Gly Cys Gly Asn Ala Tyr Cys Pro Asn Gln 150 155 Lys Val Leu Lys Tyr Tyr Tyr Val Cys Gln Tyr Cys Pro Ala Gly Asn 170 165 Trp Ala Asn Arg Leu Tyr Val Pro Tyr Glu Gln Gly Ala Pro Cys Ala 185 Ser Cys Pro Asp Asn Cys Asp Asp Gly Leu Cys Thr Asn Gly Cys Lys 200 Tyr Glu Asp Leu Tyr Ser Asn Cys Lys Ser Leu Lys Leu Thr Leu Thr 215

Cys Lys His Gln Leu Val Arg Asp Ser Cys Lys Ala Ser Cys Asn Cys 225 230 235 240 Ser Asn Ser Ile Tyr \* 245

<210> 1518 <211> 122 <212> PRT <213> Homo sapiens

<400> 1518 Met Arg Asn Arg Arg Thr Glu Arg Thr Cys Thr Pro Pro Leu Ala Ser 10 Pro Tyr Asn Leu Val Pro His Leu Gln Asn Leu Leu Ala Val Leu Leu 20 25 Met Ile Leu Val Leu Thr Pro Met Val Leu Asn Pro His Lys Leu Tyr 40 Gln Met Met Thr Gln Asn Ile Leu Leu Gln Lys Pro Gln Lys Asn Phe 55 60 Ile Trp Thr Ala Leu Lys Gly Asn Leu Ser Tyr Pro Arg Asn Leu Leu 70 Leu Gln Ser His Leu Ser Leu Leu Leu His Ser Leu Leu Glu Leu 85 90 Asn Gln Arg Val Cys Leu Leu Pro Arg Ser Leu Ile Asp Pro Gly Lys 3.00 105 Arg Leu Lys Lys Pro Met Glu Thr Phe 120

<210> 1519 <211> 249 <212> PRT <213> Homo sapiens

<400> 1519 Met Gly Leu Ser Ile Phe Leu Leu Cys Val Leu Gly Leu Ser Gln 5 10 Ala Ala Thr Pro Lys Ile Phe Asn Gly Thr Glu Cys Gly Arg Asn Ser 25 Gln Pro Trp Gln Val Gly Leu Phe Glu Gly Thr Ser Leu Arg Cys Gly 40 Gly Val Leu Ile Asp His Arg Trp Val Leu Thr Ala Ala His Cys Ser ·55 Gly Ser Arg Tyr Trp Val Arg Leu Gly Glu His Ser Leu Ser Gln Leu 70 75 Asp Trp Thr Glu Gln Ile Arg His Ser Gly Phe Ser Val Thr His Pro 90 Gly Tyr Leu Gly Ala Ser Thr Ser His Glu His Asp Leu Arg Leu Leu 100 105 Arg Leu Arg Leu Pro Val Arg Val Thr Ser Ser Val Gln Pro Leu Pro 120 125 Leu Pro Asn Asp Cys Ala Thr Ala Gly Thr Glu Cys His Val Ser Gly 135 140 Trp Gly Ile Thr Asn His Pro Arg Asn Pro Phe Pro Asp Leu Leu Gln

145 150 155 Cys Leu Asn Leu Ser Ile Val Ser His Ala Thr Cys His Gly Val Tyr 165 170 Pro Gly Arg Ile Thr Ser Asn Met Val Cys Ala Gly Gly Val Pro Gly 185 Gln Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Gly Gly 200 Val Leu Gln Gly Leu Val Ser Trp Gly Ser Val Gly Pro Cys Gly Gln 215 220 Asp Gly Ile Pro Gly Val Tyr Thr Tyr Ile Cys Lys Tyr Val Asp Trp 230 235 Ile Arg Met Ile Met Arg Asn Asn

<210> 1520 <211> 292 <212> PRT <213> Homo sapiens

<400> 1520

Met Leu Val Leu Gln Ile Leu Leu Cys Ile Arg Glu Phe Ile Leu Glu 10 Arg Ser Leu Ile Asn Val Lys Asn Val Ala Lys Ser Leu Ala Val Val 20 25 Leu Ala Leu Leu Asn Ile Gly Lys Phe Ile Leu Glu Lys Ile Phe Thr 40 Asn Ala Lys Tyr Val Leu Asn Leu Leu Val Ser Gln Ile Leu Leu 50 - 55 60 Cys Met Arg Glu Phe Ile Leu Glu Arg Asn Pro Ile Asn Val Lys Asn 70 75 Val Ala Lys Pro Phe Leu Ile Val His Thr Leu Phe Asp Ile Ile Glu 90 Phe Ile Leu Glu Lys Asn His Thr Asn Val Lys His Val Ala Asn Leu 100 105 Leu Val Thr Pro Gln Val Leu Leu Cys Ile Gly Glu Leu Ile Leu Glu 120 125 Arg Asn Pro Ile His Val Lys Asn Val Ala Lys Pro Leu Val Ile Val 135 140 Gln Met Leu Phe Ser Ile Gly Glu Phe Ile Leu Ala Arg Asp Pro Thr Asn Val Lys Asn Val Ala Lys Pro Ser Thr Ile Gly His Thr Ser Leu 165 170 His Ile Lys Glu Val Ile Leu Glu Arg Asp Pro Thr Asn Val Lys Asn 180 185 Val Ala Lys Pro Ser Thr Leu Gly His Thr Ser Leu His Ile Gly Glu 195 200 205 Asp Ile Leu Glu Arg Asp Pro Thr Asn Val Met Asn Val Val Lys Pro 215 220 Ser Ala Ile Gly His Thr Ser Leu His Ile Gly Glu Val Ile Val Glu 230 235 Arg Asp Pro Thr Asn Val Lys Asn Val Ala Lys Pro Leu Thr Leu Gly 250 245 His Thr Ser Leu His Ile Arg Glu Val Ile Leu Glu Lys Asn Phe Lys 260 265 Asn Val Lys His Gly Ala Asp Phe Leu Leu Val Thr His Val Leu Leu 280

Cys Ile Arg \* 290 291

<210> 1521 <211> 129 <212> PRT <213> Homo sapiens

<400> 1521 Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Leu Ala Val Leu Gln Gly 10 Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys 20 25 Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe 40 Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu 55 60 Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser 70 75 Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser 85 90 Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met 105 110 Tyr Tyr Cys Ala Arg His Thr Val Arg Glu Thr Ser Pro Glu Pro Val 115 120 125

<210> 1522 <211> 66 <212> PRT <213> Homo sapiens

<210> 1523 <211> 131 <212> PRT <213> Homo sapiens

<400> 1523 Met Ile Leu Leu Ala Phe Leu Val Cys Trp Gly Pro Leu Phe Gly Leu 10 Leu Leu Ala Asp Val Phe Gly Ser Asn Leu Trp Ala Gln Glu Tyr Leu 25 Arg Gly Met Asp Trp Ile Leu Ala Leu Ala Val Leu Asn Ser Ala Val 40 Asn Pro Ile Ile Tyr Ser Phe Arg Ser Arg Glu Val Cys Arg Ala Val 55 Leu Ser Phe Leu Cys Cys Gly Cys Leu Arg Leu Gly Met Arg Gly Pro 70 75 Gly Asp Cys Leu Ala Arg Ala Val Glu Ala His Ser Gly Ala Ser Thr Thr Asp Ser Ser Leu Arg Pro Arg Asp Ser Phe Arg Gly Ser Arg Ser 105 110 Leu Ser Phe Arg Met Arg Glu Pro Leu Ser Ser Ile Ser Ser Val Arg 120 Ser Ile \* 130

<210> 1524 <211> 52 <212> PRT <213> Homo sapiens

<400> 1524

<210> 1525 <211> 246 <212> PRT <213> Homo sapiens

<400> 1525

 Met
 Thr
 Leu
 Phe
 Pro
 Val
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 Leu
 Phe
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 Val
 Ala
 Gly
 Leu
 Pro
 Ala
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 Pro
 Ala
 Ala
 Asn
 Glu
 Asp
 Lys
 Asp
 Pro
 Ala
 Pro
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Gly Glu Asn Leu Tyr Met Ser Ser Ala Ser Ser Ser Trp Ser Gln Ala 105 Ile Gln Ser Trp Phe Asp Glu Tyr Asn Asp Phe Asp Phe Gly Val Gly 120 125 Pro Lys Thr Pro Asn Ala Val Val Gly His Tyr Thr Gln Val Val Trp 130 135 140 Tyr Ser Ser Tyr Leu Val Gly Cys Gly Asn Ala Tyr Cys Pro Asn Gln 150 155 Lys Val Leu Lys Tyr Tyr Tyr Val Cys Gln Tyr Cys Pro Ala Gly Asn 165 170 Trp Ala Asn Arg Leu Tyr Val Pro Tyr Glu Gln Gly Ala Pro Cys Ala . 180 185 Ser Cys Pro Asp Asn Cys Asp Asp Gly Leu Cys Thr Asn Gly Cys Lys 200 205 Tyr Glu Asp Leu Tyr Ser Asn Cys Lys Ser Leu Lys Leu Thr Leu Thr 215 220 Cys Lys His Gln Leu Val Arg Asp Ser Cys Lys Ala Ser Cys Asn Cys 235 Ser Asn Ser Ile Tyr \* 245

<210> 1526 <211> 47 <212> PRT <213> Homo sapiens

.<210> 1527
<211> 118
<212> PRT
<213> Homo sapiens

<400> 1527 Met Ser Ala Arg Gly Trp Pro Cys Glu Ala Phe Val Leu Ala Gln Val 5 10 Cys Trp Cys Trp Leu Cys Val Arg Gly Arg Leu Cys Glu Ala Leu Thr 20 25 Leu Ala Gln Val Arg Arg His Gln Val Cys Val Pro Gly Gln Pro Cys 40 Glu Ala Leu Thr Leu Thr Gln Val Arg Arg His Gln Leu Cys Val Trp 55 Gly Arg Pro Cys Glu Ala Leu Thr Leu Ala Gln Val Cys Trp Leu Trp Leu Cys Val Gln Gly Trp Pro His Glu Ala Leu Thr Leu Ala Gln Val 85 90 Arg Gln His Gln Val Cys Val Arg Gly Arg Pro Cys Glu Ala Leu Ser

100 105 110 Leu Ala Gln Val Arg \* 115 117

<210> 1528 <211> 92 <212> PRT <213> Homo sapiens

<210> 1529 <211> 71 <212> PRT <213> Homo sapiens

<210> 1530 <211> 85 <212> PRT <213> Homo sapiens

<210> 1531 <211> 60 <212> PRT <213> Homo sapiens

<210> 1532 <211> 53 <212> PRT <213> Homo sapiens

<210> 1533 <211> 741 <212> PRT <213> Homo sapiens

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Trp Lys Leu Val Ser Glu Met Lys Ala Glu Asn Ile Lys Ser Phe Leu
                        55
Arg Ser Phe Thr Lys Leu Pro His Leu Ala Gly Thr Glu Gln Asn Phe
                   70
                                        75
Leu Leu Ala Lys Lys Ile Gln Thr Gln Trp Lys Lys Phe Gly Leu Asp
                                    90
Ser Ala Lys Leu Val His Tyr Asp Val Leu Leu Ser Tyr Pro Asn Glu
                              105
Thr Asn Ala Asn Tyr Ile Ser Ile Val Asp Glu His Glu Thr Glu Ile
                           120
Phe Lys Thr Ser Tyr Leu Glu Pro Pro Pro Asp Gly Tyr Glu Asn Val
                       135
                                           140
Thr Asn Ile Val Pro Pro Tyr Asn Ala Phe Ser Ala Gln Gly Met Pro
                   150
                                      155
Glu Gly Asp Leu Val Tyr Val Asn Tyr Ala Arg Thr Glu Asp Phe Phe
               165
                                   170
Lys Leu Glu Arg Glu Met Gly Ile Asn Cys Thr Gly Lys Ile Val Ile
                               185
Ala Arg Tyr Gly Lys Ile Phe Arg Gly Asn Lys Val Lys Asn Ala Met
                           200
                                              205
Leu Ala Gly Ala Ile Gly Ile Ile Leu Tyr Ser Asp Pro Ala Asp Tyr
                       215
                                           220
Phe Ala Pro Glu Val Gln Pro Tyr Pro Lys Gly Trp Asn Leu Pro Gly
                   230
                                      235
Thr Ala Ala Gln Arg Gly Asn Val Leu Asn Leu Asn Gly Ala Gly Asp
               245
                                   250
Pro Leu Thr Pro Gly Tyr Pro Ala Lys Glu Tyr Thr Phe Arg Leu Asp
           260
                               265
                                                   270
Val Glu Glu Gly Val Gly Ile Pro Arg Ile Pro Val His Pro Ile Gly
                            280
Tyr Asn Asp Ala Glu Ile Leu Leu Arg Tyr Leu Gly Gly Ile Ala Pro
                       295
                                            300
Pro Asp Lys Ser Trp Lys Gly Ala Leu Asn Val Ser Tyr Ser Ile Gly
                   310
                                       315
Pro Gly Phe Thr Gly Ser Asp Ser Phe Arg Lys Val Arg Met His Val
                                   330
               325
Tyr Asn Ile Asn Lys Ile Thr Arg Ile Tyr Asn Val Val Gly Thr Ile
                               345
Arg Gly Ser Val Glu Pro Asp Arg Tyr Val Ile Leu Gly Gly His Arg
                           360
                                               365
Asp Ser Trp Val Phe Gly Ala Ile Asp Pro Thr Ser Gly Val Ala Val
                      375
                                           380
Leu Gln Glu Ile Ala Arg Ser Phe Gly Lys Leu Met Ser Lys Gly Trp
                   390
                                       395
Arg Pro Arg Arg Thr Ile Ile Phe Ala Ser Trp Asp Ala Glu Glu Phe
               405
                                   410
Gly Leu Leu Gly Ser Thr Glu Trp Ala Glu Glu Asn Val Lys Ile Leu
                                425
Gln Glu Arg Ser Ile Ala Tyr Ile Asn Ser Asp Ser Ser Ile Glu Gly
                           440
Asn Tyr Thr Leu Arg Val Asp Cys Thr Pro Leu Leu Tyr Gln Leu Val
                       455
                                            460
Tyr Lys Leu Thr Lys Glu Ile Pro Ser Pro Asp Asp Gly Phe Glu Ser
                   470
                                       475
Lys Phe Leu Tyr Glu Ser Trp Val Glu Lys Asp Pro Ser Pro Glu Asn
                                   490
Lys Asn Leu Pro Arg Ile Asn Lys Leu Gly Ser Gly Ser Asp Phe Glu
                                505
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Ala Tyr Phe Gln Arg Leu Gly Ile Ala Ser Gly Arg Ala Arg Tyr Thr 520 Lys Asn Lys Lys Thr Asp Lys Tyr Ser Ser Tyr Pro Val Tyr His Thr 535 540 Ile Tyr Glu Thr Phe Glu Leu Val Glu Lys Phe Tyr Asp Pro Thr Phe 550 555 Lys Lys Gln Leu Ser Val Ala Gln Leu Arg Gly Ala Leu Val Tyr Glu 570 565 Leu Val Asp Ser Lys Ile Ile Pro Phe Asn Ile Gln Asp Tyr Ala Glu 580 585 590 Ala Leu Lys Asn Tyr Ala Ala Ser Ile Tyr Asn Leu Ser Lys Lys His 600 605 Asp Gln Gln Leu Thr Asp His Gly Val Ser Phe Asp Ser Leu Phe Ser 615 620 Ala Val Lys Asn Phe Ser Glu Ala Ala Ser Asp Phe His Lys Arg Leu 630 635 Ile Gln Val Asp Leu Asn Asn Pro Ile Ala Val Arg Met Met Asn Asp 645 650 Gln Leu Met Leu Leu Glu Arg Ala Phe Ile Asp Pro Leu Gly Leu Pro 660 665 670 Gly Lys Leu Phe Tyr Arg His Ile Ile Phe Ala Pro Ser Ser His Asn 675 680 685 Lys Tyr Ala Gly Glu Ser Phe Pro Gly Ile Tyr Asp Ala Ile Phe Asp 695 Ile Glu Asn Lys Ala Asn Ser Arg Leu Ala Trp Lys Glu Val Lys Lys 710 715 His Ile Ser Ile Ala Ala Phe Thr Ile Gln Ala Ala Ala Gly Thr Leu 725 730 Lys Glu Val Leu \* 740

<210> 1534 <211> 50 <212> PRT <213> Homo sapiens

<210> 1535 <211> 973 <212> PRT <213> Homo sapiens

<400> 1535
Met Val Lys Ser Lys Trp Gly Leu Ala Leu Ala Ala Val Val Thr Val

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10
Leu Ser Ser Leu Leu Met Ser Val Gly Leu Cys Thr Leu Phe Gly Leu
    . 20
                              25
Thr Pro Thr Leu Asn Gly Gly Glu Ile Phe Pro Tyr Leu Val Val Val
                          40
Ile Gly Leu Glu Asn Val Leu Val Leu Thr Lys Ser Val Val Ser Thr
                      55
Pro Val Asp Leu Glu Val Lys Leu Arg Ile Ala Gln Gly Leu Ser Ser
                   70
                                      75
Glu Ser Trp Ser Ile Met Lys Asn Met Ala Thr Glu Leu Gly Ile Ile
                                  90
Leu Ile Gly Tyr Phe Thr Leu Val Pro Ala Ile Gln Glu Phe Cys Leu
           100
                            105
Phe Ala Val Val Gly Leu Val Ser Asp Phe Phe Leu Gln Met Leu Phe
                        120
Phe Thr Thr Val Leu Ser Ile Asp Ile Arg Arg Met Glu Leu Ala Asp
                     135
                                       140
Leu Asn Lys Arg Leu Pro Pro Glu Ala Cys Leu Pro Ser Ala Lys Pro
                 150
                                    155
Val Gly Gln Pro Thr Arg Tyr Glu Arg Gln Leu Ala Val Arg Pro Ser
               165
                                 170
Thr Pro His Thr Ile Thr Leu Gln Pro Ser Ser Phe Arg Asn Leu Arg
          180
                             185
Leu Pro Lys Arg Leu Arg Val Val Tyr Phe Leu Ala Arg Thr Arg Leu
      195 200
                                          205
Ala Gln Arg Leu Ile Met Ala Gly Thr Val Val Trp Ile Gly Ile Leu
                     215
                                      220
Val Tyr Thr Asp Pro Ala Gly Leu Arg Asn Tyr Leu Ala Ala Gln Val
       230
                                    235
Thr Glu Gln Ser Pro Leu Gly Glu Gly Ala Leu Ala Pro Met Pro Val
                                250
             245
Pro Ser Gly Met Leu Pro Pro Ser His Pro Asp Pro Ala Phe Ser Ile
                            265
Phe Pro Pro Asp Ala Pro Lys Leu Pro Glu Asn Gln Thr Ser Pro Gly
                          280
Glu Ser Pro Glu Arg Gly Gly Pro Ala Glu Val Val His Asp Ser Pro
                      295
Val Pro Glu Val Thr Trp Gly Pro Glu Asp Glu Glu Leu Trp Arg Lys
                  310
                                     315
Leu Ser Phe Arg His Trp Pro Thr Leu Phe Ser Tyr Tyr Asn Ile Thr
              325
                                 330
Leu Ala Lys Arg Tyr Ile Ser Leu Leu Pro Val Ile Pro Val Thr Leu
           340
                             345
Arg Leu Asn Pro Arg Glu Ala Leu Glu Gly Arg His Pro Gln Asp Gly
                         360
Arg Ser Ala Trp Pro Pro Pro Gly Pro Ile Pro Ala Gly His Trp Glu
                     375
                                         380
Ala Gly Pro Lys Gly Pro Gly Gly Val Gln Ala His Gly Asp Val Thr
                  390
                                    395
Leu Tyr Lys Val Ala Ala Leu Gly Leu Ala Thr Gly Ile Val Leu Val
                                 410
Leu Leu Leu Cys Leu Tyr Arg Val Leu Cys Pro Arg Asn Tyr Gly
           420
                             425
Gln Leu Gly Gly Pro Gly Arg Arg Arg Gly Glu Leu Pro Cys
      435
                          440
                                            445
Asp Asp Tyr Gly Tyr Ala Pro Pro Glu Thr Glu Ile Val Pro Leu Val
                     455
                                      460
Leu Arg Gly His Leu Met Asp Ile Glu Cys Leu Ala Ser Asp Gly Met
                                    475
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Leu Leu Val Ser Cys Cys Leu Ala Gly His Val Cys Val Trp Asp Ala
                                   490
               485
Gln Thr Gly Asp Cys Leu Thr Arg Ile Pro Arg Pro Gly Arg Gln Arg
                               505
           500
Arg Asp Ser Gly Val Gly Ser Gly Leu Glu Ala Gln Glu Ser Trp Glu
                         520
                                              525
Arg Leu Ser Asp Gly Gly Lys Ala Gly Pro Glu Glu Pro Gly Asp Ser
                       535
                                           540
Pro Pro Leu Arg His Arg Pro Arg Gly Pro Pro Pro Pro Ser Leu Phe
                                       555
                   550
Gly Asp Gln Pro Asp Leu Thr Cys Leu Ile Asp Thr Asn Phe Ser Ala
               565
                                   570
Gln Pro Arg Ser Ser Gln Pro Thr Gln Pro Glu Pro Arg His Arg Ala
           580
                               585
Val Cys Gly Arg Ser Arg Asp Ser Pro Gly Tyr Asp Phe Ser Cys Leu
                           600
.Val Gln Arg Val Tyr Gln Glu Glu Gly Leu Ala Ala Val Cys Thr Pro
                       615
                                           620
Ala Leu Arg Pro Pro Ser Pro Gly Pro Val Leu Ser Gln Ala Pro Glu
                   630
                                      635
Asp Glu Gly Gly Ser Pro Glu Lys Gly Ser Pro Ser Leu Ala Trp Ala
                                  650
Pro Ser Ala Glu Gly Ser Ile Trp Ser Leu Glu Leu Gln Gly Asn Leu
           660
                               665
Ile Val Val Gly Arg Ser Ser Gly Arg Leu Glu Val Trp Asp Ala Ile
       675
                           680
Glu Gly Val Leu Cys Cys Ser Ser Glu Glu Val Ser Ser Gly Ile Thr
                      695
                                           700
Ala Leu Val Phe Leu Asp Lys Arg Ile Val Ala Ala Arg Leu Asn Gly
                   710
                                       715
Ser Leu Asp Phe Phe Ser Leu Glu Thr His Thr Ala Leu Ser Pro Leu
              725
                                  730
Gln Phe Arg Gly Thr Pro Gly Arg Gly Ser Ser Pro Ala Ser Pro Val
                              745
Tyr Ser Ser Ser Asp Thr Val Ala Cys His Leu Thr His Thr Val Pro
                          760
Cys Ala His Gln Lys Pro Ile Thr Ala Leu Lys Ala Ala Ala Gly Arg
            775
                                          780
Leu Val Thr Gly Ser Gln Asp His Thr Leu Arg Val Phe Arg Leu Glu
                   790
                                      795
Asp Ser Cys Cys Leu Phe Thr Leu Gln Gly His Ser Gly Ala Ile Thr
               805
                                   810
Thr Val Tyr Ile Asp Gln Thr Met Val Leu Ala Ser Gly Gly Gln Asp
                               825 .
Gly Ala Ile Cys Leu Trp Asp Val Leu Thr Gly Ser Arg Val Ser His
                           840
Val Phe Ala His Arg Gly Asp Val Thr Ser Leu Thr Cys Thr Thr Ser
                       855
Cys Val Ile Ser Ser Gly Leu Asp Asp Leu Ile Ser Ile Trp Asp Arg
                   870
                                       875
Ser Thr Gly Ile Lys Phe Tyr Ser Ile Gln Gln Asp Leu Gly Cys Gly
               885
                                   890
Ala Ser Leu Gly Val Ile Ser Asp Asn Leu Leu Val Thr Gly Gly Gln
                               905
Gly Cys Val Ser Phe Trp Asp Leu Asn Tyr Gly Asp Leu Leu Gln Thr
                           920
                                              925
Val Tyr Leu Gly Lys Asn Ser Glu Ala Gln Pro Ala Arg Gln Ile Leu
         935
                                          940
Val Leu Asp Asn Ala Ala Ile Val Cys Asn Phe Gly Ser Glu Leu Ser
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945 950 955 960 Leu Val Tyr Val Pro Ser Val Leu Glu Lys Leu Asp \* 965 970 972

<210> 1536 <211> 75 <212> PRT <213> Homo sapiens

<210> 1537 <211> 96 <212> PRT <213> Homo sapiens

<210> 1538 <211> 318 <212> PRT <213> Homo sapiens

85

<400> 1538
Met Val Met Arg Pro Leu Trp Ser Leu Leu Leu Trp Glu Ala Leu Leu
1 5 10 15

90 . 95 96

Pro Ile Thr Val Thr Gly Ala Gln Val Leu Ser Lys Val Gly Gly Ser Val Leu Leu Val Ala Ala Arg Pro Pro Gly Phe Gln Val Arg Glu Ala Ile Trp Arg Ser Leu Trp Pro Ser Glu Glu Leu Leu Ala Thr Phe Phe 55 Arg Gly Ser Leu Glu Thr Leu Tyr His Ser Arg Phe Leu Gly Arg Ala 70 75 Gln Leu His Ser Asn Leu Ser Leu Glu Leu Gly Pro Leu Glu Ser Gly 90 Asp Ser Gly Asn Phe Ser Val Leu Met Val Asp Thr Arg Gly Gln Pro 105 Trp Thr Gln Thr Leu Gln Leu Lys Val Tyr Asp Ala Val Pro Arg Pro 120 125 Val Val Gln Val Phe Ile Ala Val Glu Arg Asp Ala Gln Pro Ser Lys 135 Thr Cys Gln Val Phe Leu Ser Cys Trp Ala Pro Asn Ile Ser Glu Ile 150 155 Thr Tyr Ser Trp Arg Arg Glu Thr Thr Met Asp Phe Gly Met Glu Pro 165 170 His Ser Leu Phe Thr Asp Gly Gln Val Leu Ser Ile Ser Leu Gly Pro 185 Gly Asp Arg Asp Val Ala Tyr Ser Cys Ile Val Ser Asn Pro Val Ser 195 200 Trp Asp Leu Ala Thr Val Thr Pro Trp Asp Ser Cys His His Glu Ala 215 220 Ala Pro Gly Lys Ala Ser Tyr Lys Asp Val Leu Leu Val Val Val Pro 230 235 Val Ser Leu Leu Leu Met Leu Val Thr Leu Phe Ser Ala Trp His Trp 245 250 Cys Pro Cys Ser Gly Pro His Leu Arg Ser Lys Gln Leu Trp Met Arg 265 Trp Asp Leu Gln Leu Ser Leu His Lys Val Thr Leu Ser Asn Leu Ile 280 Ser Thr Val Val Cys Ser Val Val His Gln Gly Leu Val Glu Gln Ile His Thr Ala Leu Ile Lys Phe Pro Ser Leu Met Lys Lys 310

<210> 1539 <211> 157 <212> PRT <213> Homo sapiens

<400> 1539

 Lys
 Arg
 Ala
 Glu
 Val
 Asp
 Lys
 Val
 Cys
 Arg
 His
 Lys
 Tyr
 Glu
 Leu
 Met

 Glu
 Pro
 Leu
 Ile
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 Gln
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 Gly
 Asp
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 Ile
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 Thr
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<210> 1540 <211> 135 <212> PRT <213> Homo sapiens

<400> 1540

Met Gly Ser Ser Phe Ile Leu Ala Leu Leu Leu Ala Val Leu Gln Gly 10 Leu Ser Ala Gly Val Leu Leu Glu Gln Ser Arg Ala Glu Val Lys Lys 25 Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Ala Ser Gly Tyr Arg Phe . 35 40 45 Thr Ser Ala Trp Ile Ala Trp Val Arg Gln Met Pro Gly Lys Gly Leu 55 60 Glu Trp Met Gly Thr Ile Tyr Pro Ala Asp Ser Glu Val Arg Tyr Ser 70 75 Pro Ser Leu Gln Gly Gln Val Thr Leu Ser Val Asp Glu Ser Ile Ser 85 90 95 Thr Ala Tyr Leu Gln Trp Asn Ser Leu Arg Ala Ser Asp Thr Ala Thr 100 105 Tyr Tyr Cys Ala Arg Gln Ile Ile Gly Ala Leu Pro Thr Asp Pro Phe Asp Leu Leu Gly Gln Gly Thr 130 135

<210> 1541 <211> 72 <212> PRT <213> Homo sapiens

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<210> 1542
<211> 369
<212> PRT
<213> Homo sapiens
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<400> 1542 Met Ala Pro Arg Thr Leu Val Leu Leu Ser Gly Ala Leu Ala Leu Thr Gln Thr Trp Ala Gly Ser His Ser Met Arg Tyr Phe Phe Thr Ser 20 Val Ser Arg Pro Gly Arg Gly Glu Pro Arg Phe Ile Ala Val Gly Tyr 40 Val Asp Asp Thr Gln Phe Val Arg Phe Asp Ser Asp Ala Ala Ser Gln 55 60 Arg Met Glu Pro Arg Ala Pro Trp Ile Glu Gln Glu Gly Pro Glu Tyr 70 75 Trp Asp Gly Glu Thr Arg Lys Val Lys Ala His Ser Gln Thr His Arg 90 Val Asp Leu Gly Thr Leu Arg Gly Tyr Tyr Asn Gln Ser Glu Ala Gly 100 105 Ser His Thr Val Gln Arg Met Tyr Gly Cys Asp Val Gly Ser Asp Trp 120 125 Arg Phe Leu Arg Gly Tyr His Gln Tyr Ala Tyr Asp Gly Lys Asp Tyr 135 140 Ile Ala Leu Lys Glu Asp Leu Arg Ser Trp Thr Ala Ala Asp Met Ala 150 155 Ala Gln Thr Thr Lys His Lys Trp Glu Ala Ala His Val Ala Glu Gln 165 170 Leu Arg Ala Tyr Leu Glu Gly Thr Cys Val Glu Trp Leu Arg Arg Tyr 185 Leu Glu Asn Gly Lys Glu Thr Leu Gln Arg Thr Asp Ala Pro Lys Thr 200 His Met Thr His His Pro Ile Ser Asp His Glu Ala Thr Leu Arg Cys 210 . 215 220 Trp Ala Leu Ser Phe Tyr Pro Ala Glu Ile Thr Leu Thr Trp Gln Arg 230 235 Asp Gly Glu Asp Gln Thr Gln Asp Thr Glu Leu Val Glu Thr Arg Pro 250 Ala Gly Asp Gly Thr Phe Gln Lys Trp Ala Ala Val Val Val Pro Ser 260 265 Gly Gln Glu Gln Arg Tyr Thr Cys His Val Gln His Glu Gly Leu Pro 280 Lys Pro Leu Thr Leu Arg Trp Glu Pro Ser Ser Gln Pro Thr Ile Pro 295 300 Ile Val Gly Ile Ile Ala Gly Leu Val Leu Phe Gly Ala Val Ile Thr 310 315 Gly Ala Val Val Ala Ala Val Met Trp Arg Arg Lys Ser Ser Asp Arg 330 Lys Gly Val Lys Asp Arg Lys Gly Gly Ser Tyr Ser Gln Ala Ala Ser 340 345 Ser Asp Ser Ala Gln Gly Ser Asp Val Ser Leu Thr Ala Cys Lys Val 365

<210> 1543 <211> 49 <212> PRT <213> Homo sapiens

<400> 1543

<210> 1544 <211> 121 <212> PRT <213> Homo sapiens

<400> 1544

Met Lys Ile Phe Lys Cys Tyr Phe Lys His Thr Leu Gln Gln Lys Val 10 Phe Ile Leu Phe Leu Thr Leu Trp Leu Leu Ser Leu Leu Lys Leu Leu 20 25 Asn Val Arg Arg Leu Phe Pro Gln Lys Asp Ile Tyr Leu Val Glu Tyr 45 40 35 Ser Leu Ser Thr Ser Pro Phe Val Arg Asn Arg Tyr Thr His Val Lys 55 60 Asp Glu Val Arg Tyr Glu Val Asn Cys Ser Gly Ile Tyr Glu Gln Glu 70 75 80 Pro Leu Glu Ile Gly Lys Ser Leu Glu Ile Arg Arg Arg Asp Ile Ile 90 85 Asp Leu Glu Asp Asp Asp Val Val Ala Met Thr Ser Asp Cys Asp Ile 100 105 Tyr Gln Thr Leu Lys Gly Tyr Ala \*

<210> 1545 <211> 70 <212> PRT <213> Homo sapiens

Gln Pro Gly Gln Val \*
65 69

<210> 1546 <211> 58

<212> PRT

<213> Homo sapiens

<400> 1546

<210> 1547

<211> 65

<212> PRT

<213> Homo sapiens

<400> 1547

 Met Trp Leu His Glu Asn Leu Gln Phe Leu Leu Gln Leu Ile Phe His 1

 1
 5
 5
 10
 10
 15
 15

 Phe Tyr Trp Thr Val Pro Pro Trp Arg Asp Trp Cys Lys Val Ile Gln 20
 20
 25
 25
 30
 30
 30

 Gln Ala Arg Asp Asp Arg Pro Gly Pro Asn Pro Leu Leu Pro Leu Arg Met 35
 40
 45
 45
 45

 Gly Ala Trp His Leu Pro Gly His Asp Gly Leu Gly Arg Val Cys Thr 50
 56
 64

<210> 1548

<211> 78

<212> PRT

<213> Homo sapiens

<400> 1548

65 70 75 77

<210> 1549

<211> 54

<212> PRT

<213> Homo sapiens

<400> 1549

Asp Ile Gly Val Gln 50 53

<210> 1550

<211> 70

<212> PRT

<213> Homo sapiens

<400> 1550

 Met
 Val
 Asn
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 Trp
 Leu
 Ala
 Cys
 Cys
 Thr
 Val
 Val
 Thr
 Trp
 Phe

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<210> 1551

<211> 224

<212> PRT

<213> Homo sapiens

<400> 1551

 Met Arg Gln Ile Asn Lys Lys Gly Phe Trp Ser Tyr Gly Pro Val Ile

 1
 5
 10
 15

 Leu Val Val Leu Val Val Ala Val Val Ala Ser Ser Val Asn Ser Tyr

 20
 25
 30

 Tyr Ser Ser Pro Ala Gln Gln Val Pro Lys Asn Pro Ala Leu Glu Ala
 45

 Phe Leu Ala Gln Phe Ser Gln Leu Glu Asp Lys Phe Pro Gly Gln Ser
 55

 Ser Phe Leu Trp Gln Arg Gly Arg Lys Phe Leu Gln Lys His Leu Asn

Ala Ser Asn Pro Thr Glu Pro Ala Thr Ile Ile Phe Thr Ala Ala Arg 90 Glu Gly Arg Glu Thr Leu Lys Cys Leu Ser His His Val Ala Asp Ala 105 Tyr Thr Ser Ser Gln Lys Val Ser Pro Ile Gln Ile Asp Gly Ala Gly 120 Arg Thr Trp Gln Asp Ser Asp Thr Val Lys Leu Leu Val Asp Leu Glu 135 Leu Ser Tyr Gly Phe Glu Asn Gly Gln Lys Ala Ala Val Val His His 150 155 Phe Glu Ser Phe Pro Ala Gly Ser Thr Leu Ile Phe Tyr Lys Tyr Cys 165 170 175 Asp His Glu Asn Ala Ala Phe Lys Asp Val Ala Leu Val Leu Thr Val 185 180 Leu Leu Glu Glu Glu Thr Leu Glu Ala Ser Val Gly Pro Arg Glu Thr 200 Glu Glu Lys Val Arg Asp Leu Leu Trp Ala Lys Phe Thr Asn Ser \* 215 220 223

<210> 1552 <211> 57 <212> PRT <213> Homo sapiens

<210> 1553

<212> PRT <213> Homo sapiens

<211> 241

<400> 1553 Met Ser Cys Val Leu Gly Gly Val Ile Pro Leu Gly Leu Leu Phe Leu 10 Val Cys Gly Ser Gln Gly Tyr Leu Leu Pro Asn Val Thr Leu Leu Glu 20 25 Glu Leu Leu Ser Lys Tyr Gln His Asn Glu Ser His Ser Arg Val Arg 40 Arg Ala Ile Pro Arg Glu Asp Lys Glu Glu Ile Leu Met Leu His Asn 55 Lys Leu Arg Gly Gln Val Gln Pro Gln Ala Ser Asn Met Glu Tyr Met 75 Thr Trp Asp Asp Glu Leu Glu Lys Ser Ala Ala Ala Trp Ala Ser Gln 85 90 Cys Ile Trp Glu His Gly Pro Thr Ser Leu Leu Val Ser Ile Gly Gln

100 105 110 Asn Leu Gly Ala His Trp Gly Arg Tyr Arg Ser Pro Gly Phe His Val 125 120 Gln Ser Trp Tyr Asp Glu Val Lys Asp Tyr Thr Tyr Pro Tyr Pro Ser 130 135 140 Glu Cys Asn Pro Trp Cys Pro Glu Arg Cys Ser Gly Pro Met Cys Thr 145 150 155 His Tyr Thr Gln Ile Val Trp Ala Thr Thr Asn Lys Ile Gly Cys Ala 170 Val Asn Thr Cys Arg Lys Met Thr Val Trp Gly Glu Val Trp Glu Asn 180 185 190 Ala Val Tyr Phe Val Cys Asn Tyr Ser Pro Lys Gly Asn Trp Ile Gly 200 Glu Ala Pro Tyr Lys Asn Gly Arg Pro Cys Ser Glu Cys Pro Pro Ser 210 215 220 Tyr Gly Gly Ser Cys Arg Asn Asn Leu Cys Tyr Arg Glu Glu Thr Tyr 230 235 Thr 241

<210> 1554 <211> 56 <212> PRT <213> Homo sapiens

Cys Lys Trp Gly Ser Ala Val \* 50 55

<210> 1555 <211> 64 <212> PRT <213> Homo sapiens

<210> 1556

<211> 71 <212> PRT <213> Homo sapiens

<210> 1557 <211> 126 <212> PRT <213> Homo sapiens

<400> 1557 Met Gln Thr His Leu Gly Ala Ser Cys Leu Ser Leu Val Ile Arg Ile Ala Leu Leu Phe Leu Val Gln Arg Asp Gly His Leu His Ser Arg Arg 20 Glu Ile Tyr Ala Ile Phe Thr Lys Gly Ser Leu Cys Pro Ala Phe Lys 35 40 Trp Ala Arg Val Gly Arg Glu Leu Phe Leu His Leu Leu Leu Ser Asn 55 60 Cys His Gln Leu Lys Ile Ile Leu Ile Pro Lys Cys His Ile Leu Gly 70 75 Trp His Ile Leu Ile Pro Phe Thr Ser Lys Ile Trp Asp Ser Tyr Phe 90 85 95 Ile Val Gln Cys Phe Ser His Phe Thr Thr Leu Ala Asn Val Phe Met . 100 105 Glu Glu Asp Asn Pro Val Ser Glu Leu Gln Val Phe Gln \*

<210> 1558 <211> 135 <212> PRT <213> Homo sapiens

<210> 1559 <211> 203 <212> PRT <213> Homo sapiens

<400> 1559

Met Glu Leu Trp Gly Ala Tyr Leu Leu Cys Leu Phe Ser Leu Leu 10 Thr Gln Val Thr Thr Glu Pro Pro Thr Gln Lys Pro Lys Lys Ile Val 20 25 Asn Ala Lys Lys Asp Val Val Asn Thr Lys Met Phe Glu Glu Leu Lys Ser Arg Leu Asp Thr Leu Ala Gln Glu Val Ala Leu Leu Lys Glu Gln 50 55 60 Gln Ala Leu Gln Thr Val Cys Leu Lys Gly Thr Lys Val His Met Lys 70 75 Cys Phe Leu Ala Phe Thr Gln Thr Lys Thr Phe His Glu Ala Ser Glu 90 Asp Cys Ile Ser Arg Gly Gly Thr Leu Ser Thr Pro Gln Thr Gly Ser 105 Glu Asn Asp Ala Leu Tyr Glu Tyr Leu Arg Gln Ser Val Gly Asn Glu 120 125 Ala Glu Ile Trp Leu Gly Leu Asn Asp Met Ala Ala Glu Gly Thr Trp 135 140 Val Asp Met Thr Gly Ala Arg Ile Ala Tyr Lys Asn Trp Glu Thr Glu 155 Ile Thr Ala Gln Pro Asp Gly Gly Lys Thr Glu Asn Cys Ala Val Leu 165 170 Ser Gly Ala Ala Asn Gly Lys Trp Phe Asp Lys Arg Cys Arg Asp Gln 180 185 Leu Pro Tyr Ile Cys Gln Phe Gly Ile Val \*

<210> 1560 <211> 59 <212> PRT <213> Homo sapiens

195

<400> 1560
Met Met Gly Val Ser Gly Cys Met Val Leu Leu Ala Pro Leu Leu Ala
1 5 10 15

Arg Arg Ser Gln Ser Ser Leu Trp Lys Gln Phe Glu Lys Cys Ser Ala
20 25 30

Gly Pro Lys Leu Met Leu Ser Lys Phe Leu Pro Trp Gly Lys Leu Ala
35 40 45

Met Pro Ser Arg Met Ser Asn Phe Ser Pro \*
50 58

<210> 1561 <211> 50 <212> PRT <213> Homo sapiens

<210> 1562 <211> 49 <212> PRT <213> Homo sapiens

<210> 1563 <211> 69 <212> PRT <213> Homo sapiens

50 55 60 His Lys Gln Pro \* 65 68

> <210> 1564 <211> 53 <212> PRT <213> Homo sapiens

<210> 1565 <211> 236 <212> PRT <213> Homo sapiens

<400> 1565

Met Pro Arg Arg Gly Leu Ile Leu His Thr Arg Thr His Trp Leu Leu 10 Leu Gly Leu Ala Leu Leu Cys Ser Leu Val Leu Phe Met Tyr Leu Leu 20 25 Glu Cys Ala Pro Gln Thr Asp Gly Asn Ala Ser Leu Pro Gly Val Val Gly Glu Asn Tyr Gly Lys Glu Tyr Tyr Gln Ala Leu Leu Gln Glu Gln 55 60 Glu Glu His Tyr Gln Thr Arg Ala Thr Ser Leu Lys Arg Gln Ile Ala 70 75 Gln Leu Lys Gln Glu Leu Gln Glu Met Ser Glu Lys Met Arg Ser Leu 85 90 Gln Glu Arg Arg Asn Val Gly Ala Asn Gly Ile Gly Tyr Gln Ser Asn 105 Lys Glu Gln Ala Pro Ser Asp Leu Leu Glu Phe Leu His Ser Gln Ile 120 125 Asp Lys Ala Glu Val Ser Ile Gly Ala Lys Leu Pro Ser Glu Tyr Gly 135 140 Val Ile Pro Phe Glu Ser Phe Thr Leu Met Lys Val Phe Gln Leu Glu 150 155 Met Gly Leu Thr Arg His Pro Glu Glu Lys Pro Val Arg Lys Asp Lys 165 170 Arg Asp Glu Leu Val Glu Val Ile Glu Ala Gly Leu Glu Val Ile Asn 185 Asn Pro Asp Glu Asp Asp Glu Glu Glu Glu Glu Gly Pro Leu Gly 195 200 205 Glu Lys Leu Ile Phe Asn Glu Asn Asp Phe Val Glu Gly Tyr Tyr Arg 215

Thr Glu Arg Asp Lys Gly Thr Gln Tyr Glu Leu Phe 225 230 235 236

<210> 1566 <211> 77 <212> PRT <213> Homo sapiens

<210> 1567 <211> 104 <212> PRT <213> Homo sapiens

<400> 1567 Met Leu Ile Gly Leu Leu Ala Trp Leu Gln Thr Val Pro Ala His Gly 10 Cys Gln Phe Leu Pro Ile Thr Ser Val Thr Ala Thr Val Tyr His Leu 25 Pro Val His Gln Leu Lys Gly Arg Ser Arg Val Gln Lys Asn Leu Thr 40 35 45 Leu Asp Asn Glu Gly Glu Gly Thr Trp Thr Thr Cys Leu Glu Phe Leu 55 60 Glu Ser Leu Ala Gly Trp Arg Leu Gly Trp Gly Val Ser Arg Gly Val 70 75 Arg Glu Trp Leu Cys Leu Gln Gln Val Ser Leu His Gln Thr Pro Gly 85 90 Leu Pro His Lys Gln Asp Leu \*

103

<210> 1568 <211> 46 <212> PRT <213> Homo sapiens

100

```
Ala Glu Lys Asn Met His Leu Thr Asn His Val Asn Ser *
        35 .
                            40
     <210> 1569
     <211> 50
     <212> PRT
     <213> Homo sapiens
     <400> 1569
Met Leu Met Met Asp Thr Leu Trp Pro Ile Leu Leu Gln Thr Leu Lys
 1
                                   10
Val Ile Ser Gln Val Gly His Ala Gly Pro Leu Ala Asn Met Ile His
           20
                              25
Asp Asn Pro Cys Ile Ile Ala Tyr Arg Ile Thr Leu Arg Leu Val Gly
Pro
 49
     <210> 1570
     <211> 50
     <212> PRT
     <213> Homo sapiens
     <400> 1570
Met Val Gly Phe Asp Leu Leu Pro Leu Leu Phe Phe Pro Phe Phe
                                   10
Pro Ser Leu Ile Phe Phe Pro Phe Phe Ser Ser Pro Ser Phe
            20
                                25
Gln Phe Leu Pro His Gln Glu Lys Ser Gln His Val Phe Pro Pro Asn
                            40
Ala *
 49
     <210> 1571
    <211> 50
    <212> PRT
    <213> Homo sapiens
    <400> 1571
Met Tyr Leu Trp Val Val Arg Trp Lys Trp Cys Leu Gln Lys Leu Gly
                5
                                   10
Arg Arg Ile Leu Leu His Ser Leu His Asp Val Phe Ile Ala Asn Met
        20
                                25
Asp Asp Lys Gly Leu Cys Tyr Arg Gly Leu Arg Ala Pro Ser Phe Leu
                            40
                                               45
Leu
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<210> 1572 <211> 80 <212> PRT <213> Homo sapiens

<400> 1572

 Met
 Ser
 Ser
 Gly
 Arg
 Asn
 Phe
 Gly
 Phe
 Cys
 Phe
 Gln
 Trp
 Leu
 Pro
 Trp
 Trp
 10
 Trp
 Leu
 Met
 Ser
 Ser
 Ser
 His

 Ala
 Leu
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 Ala
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 Val
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<210> 1573 <211> 52 <212> PRT <213> Homo sapiens

<210> 1574 <211> 200 <212> PRT <213> Homo sapiens

50 51

<400> 1574 Met Arg Leu Ser Leu Pro Leu Leu Leu Leu Leu Gly Ala Trp Ala 5 Ile Pro Gly Gly Leu Gly Val Met Ala Pro Leu Thr Ala Thr Ala Pro 20 25 Glu Val Asp Asp Glu Glu Met Tyr Ser Ala His Met Pro Ala His Leu 35 40 Arg Cys Asp Ala Cys Arg Ala Val Ala Tyr Gln Glu Cys Gly Pro Lys 55 Thr Leu Ala Lys Ala Glu Thr Lys Leu His Thr Ser Asn Ser Gly Gly 75 Arg Arg Asp Val Ser Glu Leu Val Tyr Thr Asp Val Leu Asp Arg Ser 90 Cys Ser Arg Asn Trp Gln Asp Tyr Gly Val Arg Glu Val Asp Gln Val

100 105 110 Lys Arg Leu Thr Gly Pro Gly Leu Ser Glu Gly Pro Glu Pro Ser Ile 120 125 Ser Val Met Val Thr Gly Gly Pro Trp His Thr Arg Leu Ser Arg Thr 135 Cys Leu His Tyr Leu Gly Glu Phe Gly Glu Asp Gln Ile Tyr Glu Ala 145 150 155 His Gln Gln Gly Arg Gly Ala Leu Glu Ala Leu Leu Cys Gly Gly Pro 165 170 Pro Gly Gly Leu Leu Arg Glu Gly Val Ser His Lys Arg Arg Ala Leu Val Leu Asp Ser Thr Leu Leu \* 195

<210> 1575

<211> 51

<212> PRT

<213> Homo sapiens

<221> misc feature

<222> (1) ... (51)

<223> Xaa = any amino acid or nothing

<400> 1575

 Met Leu Leu Gly Phe Gly Asn Val Phe Ile Leu Leu Ile Leu Xaa Thr

 1
 5
 10
 15

 Ala Ile Leu Trp Leu Lys Gly Ser Gln Arg Val Pro Glu Glu Pro Gly 20
 25
 30

 Glu Gln Pro Ile Tyr Met Asn Phe Ser Glu Pro Leu Thr Lys Asp Met 35
 40
 45

 Ala Thr \*
 50

<210> 1576

<211> 124

<212> PRT

<213> Homo sapiens

<400> 1576

Ser Asp Gly Ala Ser Gly Ser Pro His Thr Gly Glu 115 120 124

> <210> 1577 <211> 860 <212> PRT <213> Homo sapiens

<400> 1577 Met Ala Cys Arg Trp Ser Thr Lys Glu Ser Pro Arg Trp Arg Ser Ala 10 Leu Leu Leu Phe Leu Ala Gly Val Tyr Gly Asn Gly Ala Leu Ala 20 25 Glu His Ser Glu Asn Val His Ile Ser Gly Val Ser Thr Ala Cys Gly 35 40 Glu Thr Pro Glu Gln Ile Arg Ala Pro Ser Gly Ile Ile Thr Ser Pro 55 60 Gly Trp Pro Ser Glu Tyr Pro Ala Lys Ile Asn Cys Ser Trp Phe Ile Arg Ala Asn Pro Gly Glu Ile Ile Thr Ile Ser Phe Gln Asp Phe Asp Ile Gln Gly Ser Arg Arg Cys Asn Leu Asp Trp Leu Thr Ile Glu Thr 100 105 Tyr Lys Asn Ile Glu Ser Tyr Arg Ala Cys Gly Ser Thr Ile Pro Pro 120 125 Pro Tyr Ile Ser Ser Gln Asp His Ile Trp Ile Arg Phe His Ser Asp 135 140 Asp Asn Ile Ser Arg Lys Gly Phe Arg Leu Ala Tyr Phe Ser Gly Lys 150 155 Ser Glu Glu Pro Asn Cys Ala Cys Asp Gln Phe Arg Cys Gly Asn Gly 170 Lys Cys Ile Pro Glu Ala Trp Lys Cys Asn Asn Met Asp Glu Cys Gly 185 Asp Arg Ser Asp Glu Glu Ile Cys Ala Lys Glu Ala Asn Pro Pro Thr ` 195 Ala Ala Ala Phe Gln Pro Cys Ala Tyr Asn Gln Phe Gln Cys Leu Ser 215 Arg Phe Thr Lys Val Tyr Thr Cys Leu Pro Glu Ser Leu Lys Cys Asp 230 235 Gly Asn Ile Asp Cys Leu Asp Leu Gly Asp Glu Ile Asp Cys Asp Val 245 250 Pro Thr Cys Gly Gln Trp Leu Lys Tyr Phe Tyr Gly Thr Phe Asn Ser 260 265 Pro Asn Tyr Pro Asp Phe Tyr Pro Pro Gly Ser Asn Cys Thr Trp Leu 280 Ile Asp Thr Gly Asp His Arg Lys Val Ile Leu Arg Phe Thr Asp Phe 295 300 Lys Leu Asp Gly Thr Gly Tyr Gly Asp Tyr Val Lys Ile Tyr Asp Gly 310 315 Leu Glu Glu Asn Pro His Lys Leu Leu Arg Val Leu Thr Ala Phe Asp 330 Ser His Ala Pro Leu Thr Val Val Ser Ser Ser Gly Gln Ile Arg Val 340 345 His Phe Cys Ala Asp Lys Val Asn Ala Ala Arg Gly Phe Asn Ala Thr 360 Tyr Gln Val Asp Gly Phe Cys Leu Pro Trp Glu Ile Pro Cys Gly Gly

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375
Asn Trp Gly Cys Tyr Thr Glu Gln Gln Arg Cys Asp Gly Tyr Trp His
                                      395
                 390
Cys Pro Asn Gly Arg Asp Glu Thr Asn Cys Thr Met Cys Gln Lys Glu
                                  410
Glu Phe Pro Cys Ser Arg Asn Gly Val Cys Tyr Pro Arg Ser Asp Arg
                             425
Cys Asn Tyr Gln Asn His Cys Pro Asn Gly Ser Asp Glu Lys Asn Cys
                          440
Phe Phe Cys Gln Pro Gly Asn Phe His Cys Lys Asn Asn Arg Cys Val
                      455
                                          460
Phe Glu Ser Trp Val Cys Asp Ser Gln Asp Asp Cys Gly Asp Gly Ser
                  470
                                      475
Asp Glu Glu Asn Cys Pro Val Ile Val Pro Thr Arg Val Ile Thr Ala
                                  490
              485
Ala Val Ile Gly Ser Leu Ile Cys Gly Leu Leu Leu Val Ile Ala Leu
                              505
Gly Cys Thr Cys Lys Leu Tyr Ser Leu Arg Met Phe Glu Arg Arg Ser
                          520
                                             525
Phe Glu Thr Gln Leu Ser Arg Val Glu Ala Glu Leu Leu Arg Arg Glu
                                          540
                      535
Ala Pro Pro Ser Tyr Gly Gln Leu Ile Ala Gln Gly Leu Ile Pro Pro
                                      555
                  550
Val Glu Asp Phe Pro Val Cys Ser Pro Asn Gln Ala Ser Val Leu Glu
              565
                                  570
Asn Leu Arg Leu Ala Val Arg Ser Gln Leu Gly Phe Thr Ser Val Arg
           580
                              585
Leu Pro Met Ala Gly Arg Ser Ser Asn Ile Trp Asn Arg Ile Phe Asn
                           600
Phe Ala Arg Ser Arg His Ser Gly Ser Leu Ala Leu Val Ser Ala Asp
                       615
                                          620
Gly Asp Glu Val Val Pro Ser Gln Ser Thr Ser Arg Glu Pro Glu Arg
                   630
                                       635
Asn His Thr His Arg Ser Leu Phe Ser Val Glu Ser Asp Asp Thr Asp
                                  650
               645
Thr Glu Asn Glu Arg Arg Asp Met Ala Gly Ala Ser Gly Gly Val Ala
                                                  670
                               665
Ala Pro Leu Pro Gln Lys Val Pro Pro Thr Thr Ala Val Glu Ala Thr
                          680
                                              685
Val Gly Ala Cys Ala Ser Ser Ser Thr Gln Ser Thr Arg Gly Gly His
                                           700
                       695
Ala Asp Asn Gly Arg Asp Val Thr Ser Val Glu Pro Pro Ser Val Ser
                                       715
                   710
Pro Ala Arg His Gln Leu Thr Ser Ala Leu Ser Arg Met Thr Gln Gly
                                   730
               725
Leu Arg Trp Val Arg Phe Thr Leu Gly Arg Ser Ser Ser Leu Ser Gln
                               745
Asn Gln Ser Pro Leu Arg Gln Leu Asp Asn Gly Val Ser Gly Arg Glu
                           760
Asp Asp Asp Asp Val Glu Met Leu Ile Pro Ile Ser Asp Gly Ser Ser
                       775
                                          780
Asp Phe Asp Val Asn Asp Cys Ser Arg Pro Leu Leu Asp Leu Ala Ser
                                       795
                   790
Asp Gln Gly Gln Gly Leu Arg Gln Pro Tyr Asn Ala Thr Asn Pro Gly
                                  810
Val Arg Pro Ser Asn Arg Asp Gly Pro Cys Glu Arg Cys Gly Ile Val
                              825
His Thr Ala Gln Ile Pro Asp Thr Cys Leu Glu Val Thr Leu Lys Asn
                           840
```

Glu Thr Ser Asp Asp Glu Ala Leu Leu Leu Cys \* 850 855 859

<210> 1578 <211> 58 <212> PRT <213> Homo sapiens

<210> 1579 <211> 572 <212> PRT <213> Homo sapiens

<400> 1579

Met Arg Arg Arg Ser Arg Met Leu Leu Cys Phe Ala Phe Leu Trp Val 10 5 Leu Gly Ile Ala Tyr Tyr Met Tyr Ser Gly Gly Gly Ser Ala Leu Ala 25 Gly Gly Ala Gly Gly Gly Ala Gly Arg Lys Glu Asp Trp Asn Glu Ile 40 Asp Pro Ile Lys Lys Lys Asp Leu His His Ser Asn Gly Glu Glu Lys 55 Ala Gln Ser Met Glu Thr Leu Pro Pro Gly Lys Val Arg Trp Pro Asp 70 75 Phe Asn Gln Glu Ala Tyr Val Gly Gly Thr Met Val Arg Ser Gly Gln 90 Asp Pro Tyr Ala Arg Asn Lys Phe Asn Gln Val Glu Ser Asp Lys Leu 105 Arg Met Asp Arg Ala Ile Pro Asp Thr Arg His Asp Gln Cys Gln Arg 120 Lys Gln Trp Arg Val Asp Leu Pro Ala Thr Ser Val Val Ile Thr Phe 135 140 His Asn Glu Ala Arg Ser Ala Leu Leu Arg Thr Val Val Ser Val Leu 150 155 Lys Lys Ser Pro Pro His Leu Ile Lys Glu Ile Ile Leu Val Asp Asp 165 170 Tyr Ser Asn Asp Pro Glu Asp Gly Ala Leu Leu Gly Lys Ile Glu Lys 185 Val Arg Val Leu Arg Asn Asp Arg Glu Gly Leu Met Arg Ser Arg 205 195 200 Val Arg Gly Ala Asp Ala Ala Gln Ala Lys Val Leu Thr Phe Leu Asp 215 220 Ser His Cys Glu Cys Asn Glu His Trp Leu Glu Pro Leu Leu Glu Arg

230 235 Val Ala Glu Asp Arg Thr Arg Val Val Ser Pro Ile Ile Asp Val Ile 245 250 Asn Met Asp Asn Phe Gln Tyr Val Gly Ala Ser Ala Asp Leu Lys Gly 265 Gly Phe Asp Trp Asn Leu Val Phe Lys Trp Asp Tyr Met Thr Pro Glu 280 Gln Arg Arg Ser Arg Gln Gly Asn Pro Val Ala Pro Ile Lys Thr Pro 295 300 Met Ile Ala Gly Gly Leu Phe Val Met Asp Lys Phe Tyr Phe Glu Glu 310 315 Leu Gly Lys Tyr Asp Met Met Asp Val Trp Gly Gly Glu Asn Leu 325 330 Glu Ile Ser Phe Arg Val Trp Gln Cys Gly Gly Ser Leu Glu Ile Ile 345 Pro Cys Ser Arg Val Gly His Val Phe Arg Lys Gln His Pro Tyr Thr 360 Phe Pro Gly Gly Ser Gly Thr Val Phe Ala Arg Asn Thr Arg Arg Ala 375 Ala Glu Val Trp Met Asp Glu Tyr Lys Asn Phe Tyr Tyr Ala Ala Val 390 395 Pro Ser Ala Arg Asn Val Pro Tyr Gly Asn Ile Gln Ser Arg Leu Glu 405 410 Leu Arg Lys Lys Leu Ser Cys Lys Pro Phe Lys Trp Tyr Leu Glu Asn 425 Val Tyr Pro Glu Leu Arg Val Pro Asp His Gln Asp Ile Ala Phe Gly 440 Ala Leu Gln Gln Gly Thr Asn Cys Leu Asp Thr Leu Gly His Phe Ala 455 460 Asp Gly Val Val Gly Val Tyr Glu Cys His Asn Ala Gly Gly Asn Gln 470 475 Glu Trp Ala Leu Thr Lys Glu Lys Ser Val Lys His Met Asp Leu Cys 485 490 Leu Thr Val Val Asp Arg Ala Pro Gly Ser Leu Ile Lys Leu Gln Gly 500 505 Cys Arg Glu Asn Asp Ser Arg Gln Lys Trp Glu Gln Ile Glu Gly Asn 520 525 Ser Lys Leu Arg His Val Gly Ser Asn Leu Cys Leu Asp Ser Arg Thr 535 540 Ala Lys Ser Gly Gly Leu Ser Val Glu Val Cys Gly Pro Ala Leu Ser 550 555 Gln Gln Trp Lys Phe Thr Leu Asn Leu Gln Gln \* 565 570 571

<210> 1580 <211> 77 <212> PRT <213> Homo sapiens

Ala Pro Ala Asn Val Ala Lys Ile Gln Leu Arg Leu Ala Gly Gln Lys
50 55 60
Arg Lys His Ser Glu Gly Pro Gly Gly Gly Val Leu \*
65 70 75 76

<210> 1581 <211> 494 <212> PRT <213> Homo sapiens

<400> 1581 Met Gly Ser Leu Gln Pro Leu Ala Thr Leu Tyr Leu Leu Gly Met Leu 10 Val Ala Ser Cys Leu Gly Arg Leu Ser Trp Tyr Asp Pro Asp Phe Gln 2.0 25 Ala Arg Leu Thr Arg Ser Asn Ser Lys Cys Gln Gly Gln Leu Glu Val 40 Tyr Leu Lys Asp Gly Trp His Met Val Cys Ser Gln Ser Trp Gly Arg Ser Ser Lys Gln Trp Glu Asp Pro Ser Gln Ala Ser Lys Val Cys Gln 70 Arg Leu Asn Cys Gly Val Pro Leu Ser Leu Gly Pro Phe Leu Val Thr 85 90 Tyr Thr Pro Gln Ser Ser Ile Ile Cys Tyr Gly Gln Leu Gly Ser Phe 100 105 Ser Asn Cys Ser His Ser Arg Asn Asp Met Cys His Ser Leu Gly Leu 120 115 Thr Cys Leu Glu Pro Gln Lys Thr Thr Pro Pro Thr Thr Arg Pro Pro 135 140 Pro Thr Thr Pro Glu Pro Thr Ala Pro Pro Arg Leu Gln Leu Val 155 150 Ala Gln Ser Gly Gly Gln His Cys Ala Gly Val Val Glu Phe Tyr Ser 165 170 175 Gly Ser Leu Gly Gly Thr Ile Ser Tyr Glu Ala Gln Asp Lys Thr Gln 185 Asp Leu Glu Asn Phe Leu Cys Asn Asn Leu Gln Cys Gly Ser Phe Leu 200 Lys His Leu Pro Glu Thr Glu Ala Gly Arg Ala Gln Asp Pro Gly Glu 215 220 Pro Arg Glu His Gln Pro Leu Pro Ile Gln Trp Lys Ile Gln Asn Ser 230 235 Ser Cys Thr Ser Leu Glu His Cys Phe Arg Lys Ile Lys Pro Gln Lys 250 Ser Gly Arg Val Leu Ala Leu Leu Cys Ser Gly Phe Gln Pro Lys Val 265 Gln Ser Arg Leu Val Gly Gly Ser Ser Ile Cys Glu Gly Thr Val Glu 280 285 Val Arg Gln Gly Ala Gln Trp Ala Ala Leu Cys Asp Ser Ser Ser Ala 295 300 Arg Ser Ser Leu Arg Trp Glu Glu Val Cys Arg Glu Gln Gln Cys Gly 310 315 Ser Val Asn Ser Tyr Arg Val Leu Asp Ala Gly Asp Pro Thr Ser Arg 325 330 Gly Leu Phe Cys Pro His Gln Lys Leu Ser Gln Cys His Glu Leu Trp 340 345 350 Glu Arg Asn Ser Tyr Cys Lys Lys Val Phe Val Thr Cys Gln Asp Pro

360 Asn Pro Ala Gly Leu Ala Ala Gly Thr Val Ala Ser Ile Ile Leu Ala 375 Leu Val Leu Leu Val Val Leu Leu Val Val Cys Gly Pro Leu Ala Tyr 390 395 Lys Lys Leu Val Lys Lys Phe Arg Gln Lys Lys Gln Arg Gln Trp Ile 405 410 Gly Pro Thr Gly Met Asn Gln Asn Met Ser Phe His Arg Asn His Thr 425 430 Ala Thr Val Arg Ser His Ala Glu Asn Pro Thr Ala Ser His Val Asp 440 Asn Glu Tyr Ser Gln Pro Pro Arg Asn Ser Arg Leu Ser Ala Tyr Pro 455 Ala Leu Glu Gly Ala Leu His Arg Ser Ser Met Gln Pro Asp Asn Ser 470 475 Ser Asp Ser Asp Tyr Asp Leu His Gly Ala Gln Arg Leu \* 490

<210> 1582 <211> 329 <212> PRT <213> Homo sapiens

<400> 1582

Met Gln Gly Leu Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe Leu 10 Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu 20 **25** . Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly Val Pro Ala Val Val Thr Ile Ile 55 60 Leu Thr Ile Ser Pro Asp Asn Tyr Gly Leu Gly Ser Tyr Gly Lys Phe 70 75 Pro Asn Gly Ser Pro Asp Asp Phe Cys Trp Ile Asn Asn Asn Ala Val 90 Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn 105 Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys 120 125 Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg 135 140 Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala 150 155 Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe Ala 165 170 Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Val 180 185 Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly 200 205 Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn 215 220 Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Asn 230 235 Ser Leu Gln Ser Ser Ser Asn Ser Thr Asn Ser Thr Thr Leu Leu Val 250

<210> 1583 <211> 49 ' <212> PRT <213> Homo sapiens

<210> 1584 <211> 671 <212> PRT <213> Homo sapiens

<400> 1584 Met Ile Ala Ser Cys Leu Cys Tyr Leu Leu Pro Ala Thr Arg Leu 5 10 Phe Arg Ala Leu Ser Asp Ala Phe Phe Thr Cys Arg Lys Asn Val Leu 20 25 Leu Ala Asn Ser Ser Ser Pro Gln Val Glu Gly Asp Phe Ala Met Ala 40 Pro Arg Gly Pro Glu Gln Glu Glu Cys Glu Gly Leu Leu Gln Gln Trp 55 60 Arg Glu Glu Gly Leu Ser Gln Val Leu Ser Thr Ala Ser Glu Gly Pro 70 75 Leu Ile Asp Lys Gly Leu Ala Gln Ser Ser Leu Ala Leu Leu Met Asp 85 90 Asn Pro Gly Glu Glu Asn Ala Ala Ser Glu Asp Arg Trp Ser Ser Arg 105 Gln Leu Ser Asp Leu Arg Ala Ala Glu Asn Leu Asp Glu Pro Phe Pro 120 125 Glu Met Leu Gly Glu Glu Pro Leu Leu Glu Val Glu Gly Val Glu Gly 135 140 Ser Met Trp Ala Ala Ile Pro Met Gln Ser Glu Pro Gln Tyr Ala Asp 150 155 Cys Ala Ala Leu Pro Val Gly Ala Leu Ala Thr Glu Gln Trp Glu Glu

				165					170					175	
Asp	Pro	Ala	Val		Ala	Trp	Ser	Ile		Pro	Glu	Pro	Val	Pro	Gln
			180					185					190		
Glu	Glu	Ala 195	Ser	Ile	Trp	Pro	Phe 200	Glu	Gly	Leu	Gly	Gln 205	Leu	Gln	Pro
Pro	Ala 210	Val	Glu	Ile	Pro	Tyr 215	His	Glu	Ile	Leu	Trp 220	Arg	Glu	Trp	Glu
Asp 225	Phe	Ser	Thr	Gln	Pro 230	Asp	Ala	Gln	Gly	Leu 235	Lys	Ala	Gly	Asp	Gly 240
Pro	Gln	Phe	Gln	Phe 245	Thr	Leu	Met	Ser	Tyr 250	Asn	Ile	Leu	Ala	Gln 255	Asp
			260					265					270	Asp	
		275					280					285		Gln	
-	290		_			295					300		_	His	_
305					310					315				Cys	320
_				325		_			330					Cys 335	_
-			340					345					350	Tyr	
_		355					360	_	_			365		Val	
	370					375		_		-	380			Val	
385					390			•		395				Arg	400
_		-		405					410					Asp 415	_
			420					425					430	Cys	
_		435				_	440			_		445		Arg	_
_	450			•		455				_	460			Gly	
465					470		_			475				Pro	480
_				485	_			-	490	_		_		Thr 495	
•			500	_			_	505	_	-	_		510	Phe	
		515					520					525			Leu
	530			_		535					540				Gly
545					550			_		555					Ala 560
				565	_				570	_				Thr 575	
	_		580					585	_	_	•		590	Thr	
		595			_		600			_		605		Ser	
Glu	Ser 610	Cys	Glu	Asn	Gly	Asn 615	Arg	Thr	Asp	His	Arg 620	Leu	Tyr	Arg	Asp
Gly 625	Thr	Leu	Lys	Leu	Leu 630	Gly	Arg	Leu	Ser	Leu 635	Leu	Ser	Glu	Glu	Ile 640

Leu Trp Ala Ala Asn Gly Leu Pro Asn Pro Phe Cys Ser Ser Asp His 645 650 655

Leu Cys Leu Leu Ala Ser Leu Gly Met Glu Val Thr Ala Pro \* 660 670

<210> 1585 <211> 318 <212> PRT <213> Homo sapiens

<400> 1585 Met Met Cys Leu Lys Ile Leu Arg Ile Ser Leu Ala Ile Leu Ala Gly 10 Trp Ala Leu Cys Ser Ala Asn Ser Glu Leu Gly Trp Thr Arg Lys Lys 20 25 Ser Leu Val Glu Arg Glu His Leu Asn Gln Val Leu Leu Glu Gly Glu Arg Cys Trp Leu Gly Ala Lys Val Arg Arg Pro Arg Ala Ser Pro Gln His His Leu Phe Gly Val Tyr Pro Ser Arg Ala Gly Asn Tyr Leu Arg Pro Tyr Pro Val Gly Glu Glu Ile His His Thr Gly Arg Ser Lys 85 Pro Asp Thr Glu Gly Asn Ala Val Ser Leu Val Pro Pro Asp Leu Thr 105 110 Glu Asn Pro Ala Gly Leu Arg Gly Ala Val Glu Glu Pro Ala Ala Pro 115 120 125 Trp Val Gly Asp Ser Pro Ile Gly Gln Ser Glu Leu Leu Gly Asp Asp 135 140 Asp Ala Tyr Leu Gly Asn Gln Arg Ser Lys Glu Ser Leu Gly Glu Ala 150 155 Gly Ile Gln Lys Gly Ser Ala Met Ala Ala Thr Thr Thr Thr Ala Ile 165 170 Phe Thr Thr Leu Asn Glu Pro Lys Pro Glu Thr Gln Arg Arg Gly Trp 185 180 Ala Lys Ser Arg Gln Arg Arg Gln Val Trp Lys Arg Arg Ala Glu Asp 200 Gly Gln Gly Asp Ser Gly Ile Ser Ser His Phe Gln Pro Trp Pro Lys 215 220 His Ser Leu Lys His Arg Val Lys Lys Ser Pro Pro Glu Glu Ser Asn 225 . 230 235 Gln Asn Gly Gly Glu Gly Ser Tyr Arg Glu Ala Glu Thr Phe Asn Ser 245 250 Gln Val Gly Leu Pro Ile Leu Tyr Phe Ser Gly Arg Arg Glu Arg Leu 260 265 Leu Leu Arg Pro Glu Val Leu Ala Glu Ile Pro Arg Glu Ala Phe Thr 275 280 285 Val Glu Ala Trp Val Lys Pro Glu Gly Gly Gln Asn Asn Pro Ala Ile 295 .300 Ile Ala Gly Asn Thr Leu Leu Leu Gly Phe Leu Lys Ser \* 310 315

<210> 1586 <211> 80

<212> PRT <213> Homo sapiens

<210> 1587 <211> 316 <212> PRT <213> Homo sapiens

<400> 1587 Met Phe Phe Gly Ser Ala Ala Leu Gly Thr Leu Thr Gly Leu Ile Ser 10 Ala Leu Val Leu Lys His Ile Asp Leu Arg Lys Thr Pro Ser Leu Glu 25 Phe Gly Met Met Ile Ile Phe Ala Tyr Leu Pro Tyr Gly Leu Ala Glu 35 40 Gly Ile Ser Leu Ser Gly Ile Met Ala Ile Leu Phe Ser Gly Ile Val 55 60 Met Ser His Tyr Thr His His Asn Leu Ser Pro Val Thr Gln Ile Leu 70 75 Met Gln Gln Thr Leu Arg Thr Val Ala Phe Leu Cys Glu Thr Cys Val 85 90 Phe Ala Phe Leu Gly Leu Ser Ile Phe Ser Phe Pro His Lys Phe Glu 100 105 Ile Ser Phe Val Ile Trp Cys Ile Val Leu Val Leu Phe Gly Arg Ala 115 120 125 Val Asn Ile Phe Pro Leu Ser Tyr Leu Leu Asn Phe Phe Arg Asp His 135 140 Lys Ile Thr Pro Lys Met Met Phe Ile Met Trp Phe Ser Gly Leu Arg 150 155 Gly Ala Ile Pro Tyr Ala Leu Ser Leu His Leu Asp Leu Glu Pro Met 165 170 Glu Lys Arg Gln Leu Ile Gly Thr Thr Thr Ile Val Ile Val Leu Phe 185 180 Thr Ile Leu Leu Gly Gly Ser Thr Met Pro Leu Ile Arg Leu Met 200 205 Asp Ile Glu Asp Ala Lys Ala His Arg Arg Asn Lys Lys Asp Val Asn 215 220 Leu Ser Lys Thr Glu Lys Met Gly Asn Thr Val Glu Ser Glu His Leu 230 235 Ser Glu Leu Thr Glu Glu Glu Tyr Glu Ala His Tyr Ile Arg Arg Gln 245 250 Asp Leu Lys Gly Phe Val Trp Leu Asp Ala Lys. Tyr Leu Asn Pro Phe 265

Phe Thr Arg Arg Leu Thr Gln Glu Asp Leu His His Gly Arg Ile Gln 280 Met Lys Thr Leu Thr Asn Lys Trp Tyr Glu Glu Val Arg Gln Gly Pro 295 Ser Gly Ser Glu Asp Asp Glu Gln Glu Leu Leu 310

<210> 1588 <211> 53 <212> PRT <213> Homo sapiens <221> misc feature <222> (1)...(53) <223> Xaa = any amino acid or nothing

<400> 1588 Met Cys Ser Leu Met Phe Gly Ser Ser Val Phe Val Cys Phe Pro Pro 10 Cys Val Pro Leu Pro Ala Pro His Ser Gly Gly Pro Pro His Arg Ala Gly Arg Ser Val Phe Ser Ala Met Lys Leu Gly Lys Xaa Arg Ser His 35 40 Lys Glu Glu Pro Gln 50

<210> 1589 <211> 437 <212> PRT

<213> Homo sapiens

<400> 1589 Met Leu Lys Val Ser Ala Val Leu Cys Val Cys Ala Ala Ala Trp Cys 5 10 15 Ser Gln Ser Leu Ala Ala Ala Ala Ala Val Ala Ala Gly Gly Arg 20 Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu Thr Thr Ile 35 Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys Phe Arg Asp Glu Val Glu Asp Asp Tyr Phe Arg Thr Trp Ser Pro Gly Lys Pro Phe Asp 70 75 Gln Ala Leu Asp Pro Ala Lys Asp Pro Cys Leu Lys Met Lys Cys Ser 85 90 Arg His Lys Val Cys Ile Ala Gln Asp Ser Gln Thr Ala Val Cys Ile 100 105 110 Ser His Arg Arg Leu Thr His Arg Met Lys Glu Ala Gly Val Asp His 115 120 125 Arg Gln Trp Arg Gly Pro Ile Leu Ser Thr Cys Lys Gln Cys Pro Val 135 Val Tyr Pro Ser Pro Val Cys Gly Ser Asp Gly His Thr Tyr Ser Phe 150 155 Gln Cys Lys Leu Glu Tyr Gln Ala Cys Val Leu Gly Lys Gln Ile Ser

170 165 Val Lys Cys Glu Gly His Cys Pro Cys Pro Ser Asp Lys Pro Thr Ser 185 Thr Ser Arg Asn Val Lys Arg Ala Cys Ser Asp Leu Glu Phe Arg Glu 200 205 Val Ala Asn Arg Leu Arg Asp Trp Phe Lys Ala Leu His Glu Ser Gly 215 220 Ser Gln Asn Lys Lys Thr Lys Thr Leu Leu Arg Pro Glu Arg Ser Arg 225 230 235 Phe Asp Thr Ser Ile Leu Pro Ile Cys Lys Asp Ser Leu Gly Trp Met 245 250 Phe Asn Arg Leu Asp Thr Asn Tyr Asp Leu Leu Leu Asp Gln Ser Glu 265 260 Leu Arg Ser Ile Tyr Leu Asp Lys Asn Glu Gln Cys Thr Lys Ala Phe 280 285 Phe Asn Ser Cys Asp Thr Tyr Lys Asp Ser Leu Ile Ser Asn Asn Glu 295 300 Trp Cys Tyr Cys Phe Gln Arg Gln Gln Asp Pro Pro Cys Gln Thr Glu 310 315 Leu Ser Asn Ile Gln Lys Arg Gln Gly Val Lys Lys Leu Leu Gly Gln 325 330 Tyr Ile Pro Leu Cys Asp Glu Asp Gly Tyr Tyr Lys Pro Thr Gln Cys 345 His Gly Ser Val Gly Gln Cys Trp Cys Val Asp Arg Tyr Gly Asn Glu 355 360 365 Val Met Gly Ser Arg Ile Asn Gly Val Ala Asp Cys Ala Ile Asp Phe 375 380 Glu Ile Ser Gly Asp Phe Ala Ser Gly Asp Phe His Glu Trp Thr Asp 390 395 Asp Glu Asp Asp Glu Asp Asp Ile Met Asn Asp Glu Asp Glu Ile Glu 405 410 Asp Asp Asp Glu Asp Glu Gly Asp Asp Asp Asp Gly Gly Asp Asp His 425 420 Asp Val Tyr Ile \* 435 436

<210> 1590 <211> 49 <212> PRT <213> Homo sapiens

<210> 1591 <211> 73 <212> PRT

## <213> Homo sapiens

<210> 1592 <211> 62 <212> PRT <213> Homo sapiens

<400> 1592

 Met Tyr
 Phe Ser Leu Ile
 Phe Leu Val Phe Phe Phe Leu Ser Leu Pro 1
 15

 Leu Ser Ser Ser Ser Ser Glu Pro Thr Ser Ser Ile Leu Gly Phe Ser 20
 25
 30

 Ser Ser Ser Leu Ser Ser Ser Ser Phe Ser Pro Phe Ser Ser Ser Ser Ala 35
 45

 Ser Ser Ser Leu Ile Ser Phe Ser Arg Ser Phe Ser Lys \*
 55

<210> 1593 <211> 128 <212> PRT <213> Homo sapiens

<400> 1593

Met Arg Ala Met Leu Gly Thr Cys Ala Leu Gly Gln Phe Phe Leu Ile 10 Met Gly Asn Thr Gln Arg Cys Asp Asp Phe Pro Thr Glu Ser Pro Pro 20 25 Ala Lys Thr Asn Val Ser Arg Ala Gly Leu Ser Pro Pro Cys Glu Ala 40 45 Leu His Gly Val Glu Ser Arg Gly Ser Cys Ser His Gly Lys Leu Gln Ser Pro Pro Gly Arg Asp Trp Pro Gln Gly Asp Pro Gln Asp Arg Pro Lys Arg Arg Trp Gln Arg Pro Gly Pro Ala Gly Arg Gly Ala Pro Asp 90 Pro Thr Pro Lys Gly Gln Gly Ala Ala Val Pro Pro Arg Ser Ala Ser 105 Met Phe Leu Ile His Lys Gln Met Trp Ala Tyr Gly Phe Gly Asp \* 120

<210> 1594 <211> 46 <212> PRT <213> Homo sapiens

<210> 1595 <211> 86 <212> PRT <213> Homo sapiens

<210> 1596 <211> 69 <212> PRT <213> Homo sapiens

<210> 1597 <211> 56 <212> PRT <213> Homo sapiens

<210> 1598 <211> 97 <212> PRT <213> Homo sapiens

<400> 1598 Met His Glu Ser Pro Leu Ala Trp Ala Ser Val His Leu Ser Ser Leu 5 10 Pro Leu Leu Cys Thr Ala Cys Ser Ser Pro Leu Met Gly Asn Ser Val 20 25 Leu Cys Arg Ala Pro Ala Asp Met Gly Leu Ala Trp Met Leu Leu Leu 35 40 Ser Glu Pro Arg Arg Val Val Pro Gly Ile Ala Ala Gln Val Leu Thr Ala Leu Arg Arg Leu Leu Ser Gly Thr Leu Pro Ser Phe Pro Arg 70 75 Arg Lys Asn Pro Leu His Glu His Leu Leu Ala Phe Ile Val Arg Leu 90

<210> 1599 <211> 113 <212> PRT <213> Homo sapiens

<210> 1600 <211> 103 <212> PRT <213> Homo sapiens

<400> 1600 Met Gly Ala Trp Ala Trp Val Pro Thr Pro Ser Leu Cys Leu Cys His 10 Ser Thr Cys Leu Glu Phe Leu Leu Phe Leu Tyr Ile Leu Phe Tyr Cys 20 25 Ile Phe Glu Thr Val Ser Leu Ser Pro Arg Leu Glu Arg Ser Gly Ala 40 Ile Leu Ala Arg Cys Asn Leu Cys Leu Arg Gly Ser Ser Asp Ser Arg . 60 50 55 Ala Leu Ala Ser Arg Val Ala Glu Thr Thr Gly Met His His Ala 75 70 Trp Leu Ile Phe Ala Phe Leu Val Glu Thr Gly Phe His His Val Gly 85 90 Gln Ala Gly Leu Asn Ser 100 102

<210> 1601 <211> 84 <212> PRT <213> Homo sapiens

<210> 1602 <211> 91 <212> PRT

## <213> Homo sapiens

<400> 1602 Met Lys Thr Leu Pro Val Leu Val Leu Ser Leu Thr Leu Leu Thr Val 5 10 Phe Ser Glu Thr Ser Pro Ile Leu Thr Glu Lys Gln Ala Lys Gln Leu 20 25 Leu Arg Ser Arg Arg Gln Asp Arg Pro Ser Lys Pro Gly Phe Pro Asp 40 Glu Pro Met Arg Glu Tyr Met His His Leu Leu Ala Leu Glu His Arg 55 60 Ala Glu Glu Gln Phe Leu Glu His Trp Leu Asn Pro His Cys Lys Pro 70 75 His Cys Asp Arg Asn Arg Ile His Pro Val 85

<210> 1603 <211> 69 <212> PRT <213> Homo sapiens

<210> 1604 <211> 83 <212> PRT <213> Homo sapiens

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<211> 110
    <212> PRT
    <213> Homo sapiens
    <221> misc_feature
    <222> (1)...(110)
    <223> Xaa = any amino acid or nothing
    <400> 1605
Met Ser Thr Ile Ile Phe Gln Trp Pro Phe Met Leu Val Ser Leu His
                                    10
Arg Cys Arg Lys Leu Pro Arg Ala Leu Lys Asp Trp Gln Ala Phe Leu
           20
                                25
Asp Leu Lys Lys Ile Ile Asp Asp Phe Ser Glu Cys Cys Pro Leu Leu
                            40
Glu Tyr Met Gly Ser Lys Ala Met Met Glu Arg His Xaa Glu Arg Ile
Thr Thr Leu Thr Gly His Ser Leu Asp Val Gly Asn Glu Ser Phe Lys
                   70
                                       75
Leu Arg Asn Ile Met Glu Ala Pro Leu Leu Xaa Tyr Lys Glu Glu Ile
               85
                                   90
Glu Val Glu Tyr Asp Val Met Glu Asp Cys Lys Val Ser Trp
            100
                               105
```

<211> 72 <212> PRT <213> Homo sapiens

· <210> 1606

<210> 1605

<210> 1607 <211> 59 <212> PRT <213> Homo sapiens

Phe Leu Leu Ser Phe Ile Ser Tyr Phe Cys Leu Phe Pro Cys Ser 25 Asn Leu Pro Lys Val Ile Ala Ile Phe Asn Ile Val Leu Ile Leu Ser 35 40 Ile Val Phe Arg Glu Ile Thr Asp Thr Tyr 55 58

<210> 1608 <211> 118 <212> PRT <213> Homo sapiens

<400> 1608 Met Leu Val Thr Asp Thr Glu Ala Phe Trp Gln Pro Gln Pro Trp Phe 5 10 Val Val Leu Thr Ala Thr Gly Ala Leu Leu Leu Ala Leu Gly 2.0 25 Trp Leu Leu Gly Arg Leu Leu Gln Gly Leu Ala Gln Leu Leu Gln Ala 40 Pro Ser Lys Pro Ala Gln Ala Leu Leu Leu Asn Ser Ile Gln Gly Thr Glu Gly Ser Ile Glu Gly Phe Leu Glu Ala Pro Lys Met Glu Met Ser 70 75 Gln Ala Pro Ser Ser Val Met Ser Leu Gln His Phe Asp Gly Arg Thr 85 90 Gln Asp Ser Arg Thr Gly Arg Asp Tyr Leu Val Asn Thr His Thr Gly 105 Ala Arg Arg Trp Leu \* 115 117

<210> 1609 <211> 50 <212> PRT <213> Homo sapiens

<400> 1609 Met Val Ile Gly Ser Leu His Thr Phe Thr Leu Leu Ala Ala Ser Ser 5 10 Leu Val Asp Thr Pro Lys Gln Ile Gln Leu Leu Met Gln Asn Leu Met 25 Asn Asp Pro Arg Lys Glu Val Lys Ile Leu Ala Ile Gln Asp Leu Lys 40 Leu Leu 50

<210> 1610 <211> 50 <212> PRT <213> Homo sapiens

<400> 1610 Met Val Leu Ile Leu Ser Pro Gly Leu Ser Ile Leu Phe Thr Lys Met 5 10 Ser Glu Thr Phe Ser Ser Ser Leu Leu Lys Leu Ser Ser Ser Ile Cys 25 20 Ile Phe Pro Leu Cys Ile Asn Met Ile Ile Cys Tyr Gln Lys Lys Ser 40 Gln \* 49

<210> 1611 <211> 56 <212> PRT

<213> Homo sapiens

<400> 1611 Met Ser Phe Gln Ala Phe Val Phe Leu Met Ile Gly Trp Leu His Pro 10 Asp Pro Arg Leu Met Thr Gln Arg Ser Cys Gly Pro His Pro Glu Val 25 Asp Ser Ala Gln Glu Asp His Phe Ser His Pro Tyr Asp Ile Pro Asn 35 40 Gln Ser Ala Pro Pro Leu Pro \* 50

<210> 1612 <211> 75 <212> PRT <213> Homo sapiens

<400> 1612 Met Leu Thr Leu Ala Leu Leu Val Leu Arg Ile Cys Val Cys Glu Ala 5 10 Ala Ser Thr Phe Val Cys Pro Cys Leu Pro Trp Leu Ser Leu Leu Phe 20 25 Leu His Leu Leu Pro Arg Leu Phe Gln Val Gln Ile Trp Phe Leu Leu 35 40 45 Phe Leu Pro Phe Leu Leu Leu Pro Ser Val Pro Glu Ile Phe Pro 55 Ala Pro Gln Ala Trp Gly Leu Gly Cys Ser \* 70

<210> 1613 <211> 192 <212> PRT <213> Homo sapiens

<400> 1613 Met Phe Thr Cys Leu Phe Leu Phe Ser Ala Val Leu Arg Ala Leu Phe 5

Arg Lys Ser Asp Pro Lys Arg Phe Gln Asn Ile Phe Thr Thr Ile Phe 25 Thr Leu Phe Thr Leu Leu Thr Leu Asp Asp Trp Ser Leu Ile Tyr Met Asp Ser Arg Ala Gln Gly Ala Trp Tyr Ile Ile Pro Ile Leu Ile Ile 60 Tyr Ile Ile Ile Gln Tyr Phe Ile Phe Leu Asn Leu Val Ile Thr Val 70 75 Leu Val Asp Ser Phe Gln Thr Ala Leu Phe Lys Gly Leu Glu Lys Ala 85 90 Lys Gln Glu Arg Ala Ala Arg Ile Gln Glu Lys Leu Leu Glu Asp Ser 100 105 Leu Thr Glu Leu Arg Ala Ala Glu Pro Lys Glu Val Ala Ser Glu Gly 120 115 Thr Met Leu Lys Arg Leu Ile Glu Lys Lys Phe Gly Thr Met Thr Glu 135 140 Lys Gln Gln Glu Leu Leu Phe His Tyr Leu Gln Leu Val Ala Ser Val 155 150 Glu Gln Glu Gln Lys Phe Arg Ser Gln Ala Ala Val Ile Asp Glu 165 170 Ile Val Asp Thr Thr Phe Glu Ala Gly Glu Glu Asp Phe Arg Asn \* 180 185

<210> 1614 <211> 153 <212> PRT <213> Homo sapiens

<400> 1614 Met Asp Leu Val Gln Phe Phe Val Thr Phe Phe Ser Cys Phe Leu Ser 5 Leu Leu Val Ala Ala Val Val Trp Lys Ile Lys Gln Thr Cys Trp 25 Ala Ser Arg Arg Glu Gln Leu Leu Arg Glu Arg Gln Gln Met Ala 35 40 Ser Arg Pro Phe Ala Ser Val Asp Val Ala Leu Glu Val Gly Ala Glu Gln Thr Glu Phe Leu Arg Gly Pro Leu Glu Gly Ala Pro Lys Pro Ile 70 75 Ala Ile Glu Pro Cys Ala Gly Asn Arg Ala Ala Val Leu Thr Val Phe 90 85 Leu Cys Leu Pro Arg Gly Ser Ser Gly Ala Pro Pro Pro Gly Gln Ser 100 105 Gly Leu Ala Ile Ala Ser Ala Leu Ile Asp Ile Ser Gln Gln Lys Ala 120 125 Ser Asp Ser Lys Asp Lys Thr Ser Gly Val Arg Asn Arg Lys His Leu 135 140 Ser Thr Arg Gln Gly Thr Cys Val \* 145 150 152

<210> 1615 <211> 135 <212> PRT <213> Homo sapiens

<400> 1615 Met His Trp Leu Arg Ala Ser Ala Gly Ser Leu Leu Met Val Pro Leu - 5 10 Met Thr Asp Leu His Glu Leu Ala Leu Pro Pro Ala Ser Leu Arg Thr 20 25 Val Val Lys Glu Asn Met Cys Val Leu Pro Phe Pro Val Lys Thr Ser Gly Arg Ser Leu Thr Gly Ser Ala Trp Ser Arg Phe His Leu Pro Cys 55 His Leu Arg Pro Gly Asp Arg Leu Pro Cys His Cys Leu Gly Lys Phe 70 75 Arg Lys Arg Val Ala Lys Trp Cys Ile Arg Lys Asn Met Ala Arg Ser 90 85 Pro His Leu Leu Gly Gly Arg Pro Asn Ser Thr Ser Gly Pro Leu Cys 100 105 110 Asp Phe Pro Ala Pro Ser Lys Gln Val Thr Pro Leu Leu Trp Val Ser 115 120 Val Ser Leu Pro Ile Lys \* 130 134

<210> 1616 <211> 60 <212> PRT <213> Homo sapiens

<210> 1617 <211> 49 <212> PRT <213> Homo sapiens

<210> 1618 <211> 95 <212> PRT <213> Homo sapiens

<400> 1618 Met Trp Thr Val Leu Trp His Arg Phe Ser Met Val Leu Arg Leu Pro 1 ` 5 10 Glu Glu Ala Ser Ala Gln Glu Gly Glu Leu Ser Leu Ser Ser Pro Pro 20 25 Ser Pro Glu Pro Asp Trp Thr Leu Ile Ser Pro Gln Gly Met Ala Ala 40 45 Leu Leu Ser Leu Ala Met Ala Thr Phe Thr Gln Glu Pro Gln Leu Cys 60 55 Leu Ser Cys Leu Ser Gln His Gly Ser Ile Leu Met Ser Ile Leu Lys 75 70 His Leu Leu Cys Pro Ser Phe Leu Asn Gln Leu Arg Gln Ala \* 85

<210> 1619 <211> 54 <212> PRT <213> Homo sapiens

<210> 1620 <211> 71 <212> PRT <213> Homo sapiens

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<210> 1621
    <211> 90
    <212> PRT
    <213> Homo sapiens
    <221> misc feature
    <222> (1)...(90)
    <223> Xaa = any amino acid or nothing
    <400> 1621
Met Asp His Lys Ser Leu Trp Ala Gly Val Glu Val Leu Leu Leu
                                   10
Gln Gly Gly Ser Ala Tyr Lys Leu Val Cys Tyr Phe Thr Asn Trp Ser
                                25
Gln Asp Arg Gln Glu Pro Gly Lys Phe Thr Pro Glu Asn Ile Asp Pro
                            40
                                               45
Phe Leu Cys Ser His Leu Ile Tyr Ser Phe Ala Ser Ile Glu Asn Asn
                       55
                                          60
Lys Val Ile Ile Arg Thr Pro Xaa Phe Phe Pro Leu Pro Leu Gly His
                  70 ·
Arg Leu Gln Thr Ile Asn Pro Arg Leu
                85
    <210> 1622
     <211> 53
    <212> PRT
     <213> Homo sapiens
    <400> 1622
Met Gln Cys Ala Ile Cys Ile Leu Leu Tyr Leu Leu Asn Lys Lys Thr
                                   10
Val Trp Arg Cys Ser Arg Ile His His Asn Asn Thr Val Val Leu Thr
                               25
                                                  30
Arg Glu Ser Ser Pro Phe Leu Thr Thr Cys Thr Leu Ser Ser Val Leu
       35
                           40
Leu Thr Lys Ala *
    50 52
     <210> 1623
     <211> 978
     <212> PRT
    <213> Homo sapiens
    <400> 1623
Met Pro Ala Arg Arg Leu Leu Leu Leu Leu Thr Leu Leu Leu Pro Gly
                5
                                  10
Leu Gly Ile Phe Gly Ser Thr Ser Thr Val Thr Leu Pro Glu Thr Leu
                               25
Leu Phe Val Ser Thr Leu Asp Gly Ser Leu His Ala Val Ser Lys Arg
                           40
```

Thr Gly Ser Ile Lys Trp Thr Leu Lys Glu Asp Pro Val Leu Gln Val 55 Pro Thr His Val Glu Glu Pro Ala Phe Leu Pro Asp Pro Asn Asp Gly 70 Ser Leu Tyr Thr Leu Gly Ser Lys Asn Asn Glu Gly Leu Thr Lys Leu 90 Pro Phe Thr Ile Pro Glu Leu Val Gln Ala Ser Pro Cys Arg Ser Ser 100 105 Asp Gly Ile Leu Tyr Met Gly Lys Lys Gln Asp Ile Trp Tyr Val Ile 120 125 Asp Leu Leu Thr Gly Glu Lys Gln Gln Thr Leu Ser Ser Ala Phe Ala 135 140 Asp Ser Leu Cys Pro Ser Thr Ser Leu Leu Tyr Leu Gly Arg Thr Glu 150 155 Tyr Thr Ile Thr Met Tyr Asp Thr Lys Thr Arg Glu Leu Arg Trp Asn 165 170 Ala Thr Tyr Phe Asp Tyr Ala Ala Ser Leu Pro Glu Asp Asp Val Asp 185 Tyr Lys Met Ser His Phe Val Ser Asn Gly Asp Gly Leu Val Val Thr 195 200 Val Asp Ser Glu Ser Gly Asp Val Leu Trp Ile Gln Asn Tyr Ala Ser 215 220 Pro Val Val Ala Phe Tyr Val Trp Gln Arg Glu Gly Leu Arg Lys Val -230 235 Met His Ile Asn Val Ala Val Glu Thr Leu Arg Tyr Leu Thr Phe Met 250 Ser Gly Glu Val Gly Arg Ile Thr Lys Trp Lys Tyr Pro Phe Pro Lys 260 . 265 Glu Thr Glu Ala Lys Ser Lys Leu Thr Pro Thr Leu Tyr Val Gly Lys 280 275 Tyr Ser Thr Ser Leu Tyr Ala Ser Pro Ser Met Val His Glu Gly Val Ala Val Val Pro Arg Gly Ser Thr Leu Pro Leu Leu Glu Gly Pro Gln 310 315 Thr Asp Gly Val Thr Ile Gly Asp Lys Gly Glu Cys Val Ile Thr Pro 325 330 Ser Thr Asp Val Lys Phe Asp Pro Gly Leu Lys Ser Lys Asn Lys Leu 345 Asn Tyr Leu Arg Asn Tyr Trp Leu Leu Ile Gly His His Glu Thr Pro 360 Leu Ser Ala Ser Thr Lys Met Leu Glu Arg Phe Pro Asn Asn Leu Pro 375 380 Lys His Arg Glu Asn Val Ile Pro Ala Asp Ser Glu Lys Lys Ser Phe 390 395 Glu Glu Val Ile Asn Leu Val Asp Gln Thr Ser Glu Asn Ala Pro Thr 410 Thr Val Ser Arg Asp Val Glu Glu Lys Pro Ala His Ala Pro Ala Arg 425 Pro Glu Ala Pro Val Asp Ser Met Leu Lys Asp Met Ala Thr Ile Ile 440 Leu Ser Thr Phe Leu Leu Ile Gly Trp Val Ala Phe Ile Ile Thr Tyr 455 460 Pro Leu Ser Met His Gln Gln Gln Leu Gln His Gln Gln Phe Gln 470 475 Lys Glu Leu Glu Lys Ile Gln Leu Leu Gln Gln Gln Gln Gln Leu 485 490 Pro Phe His Pro Pro Gly Asp Thr Ala Gln Asp Gly Glu Leu Leu Asp Thr Ser Gly Pro Tyr Ser Glu Ser Ser Gly Thr Ser Ser Pro Ser Thr

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520
Ser Pro Arg Ala Ser Asn His Ser Leu Cys Ser Gly Ser Ser Ala Ser
                      535
Lys Ala Gly Ser Ser Pro Ser Leu Glu Gln Asp Asp Gly Asp Glu Glu
                   550
                                       555
Thr Ser Val Val Ile Val Gly Lys Ile Ser Phe Cys Pro Lys Asp Val
                                   570
Leu Gly His Gly Ala Glu Gly Thr Ile Val Tyr Arg Gly Met Phe Asp
           580
                              585
Asn Arg Asp Val Ala Val Lys Arg Ile Leu Pro Glu Cys Phe Ser Phe
                                             605
                          600
Ala Asp Arg Glu Val Gln Leu Leu Arg Glu Ser Asp Glu His Pro Asn
                      615
                                          620
Val Ile Arg Tyr Phe Cys Thr Glu Lys Asp Arg Gln Phe Gln Tyr Ile
                  630
                                      635
Ala Ile Glu Leu Cys Ala Ala Thr Leu Gln Glu Tyr Val Glu Gln Lys
                                  650
Asp Phe Ala His Leu Gly Leu Glu Pro Ile Thr Leu Leu Gln Gln Thr
                               665
Thr Ser Gly Leu Ala His Leu His Ser Leu Asn Ile Val His Arg Asp
            680
Leu Lys Pro His Asn Ile Leu Ile Ser Met Pro Asn Ala His Gly Lys
                      695
Ile Lys Ala Met Ile Ser Asp Phe Gly Leu Trp Lys Lys Leu Ala Val
                  710
                                      715
Gly Arg His Ser Phe Ser Arg Arg Ser Gly Val Pro Gly Thr Glu Gly
              725
                                  730
Trp Ile Ala Pro Glu Met Leu Ser Glu Asp Cys Lys Glu Asn Pro Thr
           740
                               745
Tyr Thr Val Asp Ile Phe Ser Ala Gly Cys Val Phe Tyr Tyr Val Ile
                           760
                                               765
Ser Glu Gly Ser His Pro Phe Gly Lys Ser Leu Gln Arg Gln Ala Asn
                       775
                                           780
Ile Leu Leu Gly Ala Cys Ser Leu Asp Cys Leu His Pro Glu Lys His
                                       795
                   790
Glu Asp Val Ile Ala Arg Glu Leu Ile Glu Lys Met Ile Ala Met Asp
                                   810
Pro Gln Lys Arg Pro Ser Ala Lys His Val Leu Lys His Pro Phe Phe
                               825
Trp Ser Leu Glu Lys Gln Leu Gln Phe Phe Gln Asp Val Ser Asp Arg
                           840
                                              845
Ile Glu Lys Glu Ser Leu Asp Gly Pro Ile Val Lys Gln Leu Glu Arg
                       855
                                           860
Gly Gly Arg Ala Val Val Lys Met Asp Trp Arg Glu Asn Ile Thr Val
                   870
                                       875
Pro Leu Gln Thr Asp Leu Arg Lys Phe Arg Thr Tyr Lys Gly Gly Ser
                                   890
Val Arg Asp Leu Leu Arg Ala Met Arg Asn Lys Lys His His Tyr Arg
                               905
Glu Leu Pro Ala Glu Val Arg Glu Thr Leu Gly Thr Leu Pro Asp Asp
                           920
Phe Val Cys Tyr Phe Thr Ser Arg Phe Pro His Leu Leu Ala His Thr
                                          940
                       935
Tyr Arg Ala Met Glu Leu Cys Ser His Glu Arg Leu Phe Gln Pro Tyr
                                      955
                   950
Tyr Phe His Glu Pro Pro Glu Pro Gln Pro Pro Val Thr Pro Asp Ala
                                   970
Leu *
```

<210> 1624 <211> 56 <212> PRT <213> Homo sapiens

<210> 1625 <211> 146 <212> PRT <213> Homo sapiens

<400> 1625 Met Glu Leu Ala Leu Leu Cys Gly Leu Val Val Met Ala Gly Val Ile 10 Pro Ile Gln Gly Gly Ile Leu Asn Leu Asn Lys Met Val Lys Gln Val 20 25 Thr Gly Lys Met Pro Ile Leu Ser Tyr Trp Pro Tyr Gly Cys His Cys 40 35 Gly Leu Gly Gly Arg Gly Gln Pro Lys Asp Ala Thr Asp Trp Cys Cys 55 60 Gln Thr His Asp Cys Cys Tyr Asp His Leu Lys Thr Gln Gly Cys Gly 70 Ile Tyr Lys Asp Tyr Tyr Arg Tyr Asn Phe Ser Gln Gly Asn Ile His 85 90 Cys Ser Asp Lys Gly Ser Trp Cys Glu Gln Gln Leu Cys Ala Cys Asp 100 105 Lys Glu Val Ala Phe Cys Leu Lys Arg Asn Leu Asp Thr Tyr Gln Lys 120 125 Arg Leu Arg Phe Tyr Trp Arg Pro His Cys Arg Gly Gln Thr Pro Gly 130 Cys \* 145

<210> 1626 <211> 385 <212> PRT <213> Homo sapiens

<400> 1626
Met Glu Phe Gly Leu Ser Trp Leu Phe Leu Val Ala Ile Leu Lys Gly

```
10
Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Leu Val Gln
          20
                             25
Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
                         40
Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
                      55
Glu Trp Val Ser Gly Ile Gly Gly Ser Gly Ser Ser Thr Tyr Tyr Ala
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Gln Asn
                                 90
Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
         100
                           105
Tyr Tyr Cys Ala Lys Ser His Pro Ala Tyr Tyr Tyr Gly Ser Gly Ser
                        120
                                           125
      115
Tyr Ser Ser His Tyr Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln
                     135
                                       140
Gly Thr Thr Val Thr Val Ser Ser Gly Asp Gly Ser Ser Gly Gly Ser
               150
                                   155
Gly Gly Ala Ser Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Gly Thr
              165
                                170
                                                  175
Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser
       180
                            185
Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly
                        200
Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly
                     215
                                       220
Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu
       230
                         235
Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln
             245
                               250 , 255
Gln Tyr Gly Ser Ser Pro Thr Thr Phe Gly Gln Gly Thr Lys Val Glu
                            265
Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser
       275
                        280
                                           285
Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn
                     295
                                        300
Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala
                 310
                                   315
Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys
                               330
Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp
          340
                           345
Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Ser Gly Ala
                        360
                                          365
Leu Ser Phe Ala Arg Ser Gln Arg Ser Phe Gln Pro Gly Glu Ser Val
                     375
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<210> 1627

<211> 101

<212> PRT

<213> Homo sapiens

<400> 1627

 Met
 Ile
 Val
 His
 Cys
 Thr
 Ile
 Ile
 Pro
 Leu
 Ser
 Phe
 Cys
 Val
 His
 Arg

 Leu
 Arg
 Ala
 Pro
 Leu
 Asp
 Ala
 Tyr
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 Val
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 Arg
 Thr
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 Pro
 Jan
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 Tyr
 Pro
 Asp
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 Glu
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<210> 1628 <211> 71 <212> PRT <213> Homo sapiens

<210> 1629 <211> 112 <212> PRT <213> Homo sapiens

<400> 1629 Met Ala His Tyr Lys Thr Glu Gln Asp Asp Trp Leu Ile Ile Tyr Leu 5 10 Lys Tyr Leu Leu Phe Val Phe Asn Phe Phe Phe Trp Val Gly Gly Ala 25 Ala Val Leu Ala Val Gly Ile Trp Thr Leu Val Glu Lys Ser Gly Tyr 40 Leu Ser Val Leu Ala Ser Ser Thr Phe Ala Ala Ser Ala Tyr Ile Leu 55 Ile Phe Ala Gly Val Leu Val Met Val Thr Gly Phe Leu Gly Phe Gly 75 Ala Ile Leu Trp Glu Arg Lys Gly Cys Leu Ser Thr Tyr Phe Cys Leu 90 Leu Leu Val Ile Phe Leu Asp Glu Leu Glu Ala Gly Val Leu Ala His 100 105 110

<210> 1630 <211> 47 <212> PRT <213> Homo sapiens

<210> 1631 <211> 79 <212> PRT <213> Homo sapiens

<400> 1631 Met Tyr Met Trp Ser Gly Leu Leu Gly Ser Lys Trp Thr Leu Val Tyr 5 10 Ser His Phe Leu Asn Met Ala Pro Ala Ser Phe Ser His Tyr Gln Ala 25 30 20 Ser Leu Pro Leu Glu His Asp Thr Leu Ser Ser Arg Val His 45 35 40 Ser Tyr Gln Cys Pro Gly Phe Phe Cys Phe Phe Pro Ser Val Leu Glu · 60 · 55 Phe Ser Gln Leu Gln Lys Thr Tyr Ser Leu Cys Leu Pro Phe \*

<210> 1632 <211> 48 <212> PRT <213> Homo sapiens

<210> 1633 <211> 58 <212> PRT

## <213> Homo sapiens

<400> 1633

<210> 1634 <211> 55 <212> PRT <213> Homo sapiens

<210> 1635 <211> 78 <212> PRT <213> Homo sapiens

<210> 1636 <211> 51 <212> PRT <213> Homo sapiens

<210> 1637 <211> 123 <212> PRT <213> Homo sapiens

<400> 1637 Met Gln Gln Met Met Trp Ala Gly Leu Leu Cys Pro Gln Leu Glu Trp 10 Leu Gln Gly Arg Ala Cys Arg Pro Cys Gly Leu Leu Ala Ser Asp Ala 20 25 Ala Ala Leu Trp Phe Arg Gly Gly Ile Ser Ala Trp Glu Asp Ser Cys 35 40 Ala Val Ser Asn Ile Arg His Glu Ala Tyr Asn Cys His Leu Ser Val 55 60 Phe Leu Asn Arg Cys Ala Asn Glu Leu Thr Val Gln Phe Leu Ile Ile 70 75 Leu Ala Phe Gln Ile Met Leu Ser Cys Ala Val Ile Ala Pro Ala Val 90 Pro Val Phe Gln Arg Leu Thr Leu Lys Arg Ser Gly Arg Thr Ser Leu 100 105 Gly Ser Thr Gly Arg Leu His Phe Cys Lys 120

<210> 1638 <211> 69 <212> PRT <213> Homo sapiens

<210> 1639

<211> 92 <212> PRT <213> Homo sapiens

<400> 1639

 Met
 Tyr
 Val
 Ala
 Gly
 Tyr
 Leu
 Val
 Ala
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 Gly
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 Ala
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 Cys
 Gln
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 Ile
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 Gly
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<210> 1640 <211> 58 <212> PRT <213> Homo sapiens

<210> 1641 <211> 459 <212> PRT <213> Homo sapiens

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105
Arg Ile Val Gln Leu Ile Gln Asp Thr Arg Ile His Ile Leu Pro Ser
 115 120
Met Asn Pro Asp Gly Tyr Glu Val Ala Ala Ala Gln Gly Pro Asn Lys
                    135
                                    140
Pro Gly Tyr Leu Val Gly Arg Asn Ala Asn Gly Val Asp Leu Asn
               150
                                 155
Arg Asn Phe Pro Asp Leu Asn Thr Tyr Ile Tyr Tyr Asn Glu Lys Tyr
            165
                    170
Gly Gly Pro Asn His His Leu Pro Leu Pro Asp Asn Trp Lys Ser Gln
         180
                 185
Val Glu Pro Glu Thr Arg Ala Val Ile Arg Trp Met His Ser Phe Asn
                     200
                                . 205
Phe Val Leu Ser Ala Asn Leu His Gly Gly Ala Val Val Ala Asn Tyr
                    215
                                     220
Pro Tyr Asp Lys Ser Phe Glu His Arg Val Arg Gly Val Arg Arg Thr
       230
                                235
Ala Ser Thr Pro Thr Pro Asp Asp Lys Leu Phe Gln Lys Leu Ala Lys
       245
                              250
Val Tyr Ser Tyr Ala His Gly Trp Met Phe Gln Gly Trp Asn Cys Gly
         260
                          265
Asp Tyr Phe Pro Asp Gly Ile Thr Asn Gly Ala Ser Trp Tyr Ser Leu
                       280
Ser Lys Gly Met Gln Asp Phe Asn Tyr Leu His Thr Asn Cys Phe Glu
                   295 300
Ile Thr Leu Glu Leu Ser Cys Asp Lys Phe Pro Pro Glu Glu Glu Leu
               310
                       315
Gln Arg Glu Trp Leu Gly Asn Arg Glu Ala Leu Ile Gln Phe Leu Glu
                              330
Gln Val His Gln Gly Ile Lys Gly Met Val Leu Asp Glu Asn Tyr Asn
                           345
Asn Leu Ala Asn Ala Val Ile Ser Val Ser Gly Ile Asn His Asp Val
                        360
Thr Ser Gly Asp His Gly Asp Tyr Phe Arg Leu Leu Pro Gly Ile
                    375
                                    380
Tyr Thr Val Ser Ala Thr Ala Pro Gly Tyr Asp Pro Glu Thr Val Thr
                390
                                395
Val Thr Val Gly Pro Ala Glu Pro Thr Leu Val Asn Phe His Leu Lys
            405
                              410
Arg Ser Ile Pro Gln Val Ser Pro Val Arg Arg Ala Pro Ser Arg Arg
         420
                          425
                                           430
His Gly Val Arg Ala Lys Val Gln Pro Gln Pro Arg Lys Lys Glu Met
                       440
Glu Met Arg Gln Leu Gln Arg Gly Pro Ala *
                    455
```

<210> 1642 <211> 144 <212> PRT <213> Homo sapiens

Leu Val Thr Leu His Met Leu Leu Cys Ser Ile Pro Leu Ser Gly Arg 40 Leu Asp Ser Asp Glu Gln Lys Ile Gln Asn Asp Ile Ile Asp Ile Leu 55 60 Leu Thr Phe Thr Gln Gly Val Asn Glu Lys Leu Thr Ile Ser Glu Glu 70 75 Thr Leu Ala Asn Asn Thr Trp Ser Leu Met Leu Lys Glu Val Leu Ser 85 90 Ser Ile Leu Lys Val Pro Glu Gly Phe Phe Ser Gly Leu Ile Leu Leu 100 105 Ser Glu Leu Leu Pro Leu Pro Leu Pro Met Gln Thr Thr Gln Val Ser 115 120 125 Leu Pro Tyr Asn Met His Leu Ile Asn Asp Cys Ser Asn Thr Phe \* 135 140

<210> 1643 <211> 70 <212> PRT <213> Homo sapiens

<400> 1643

<210> 1644 <211> 82 <212> PRT <213> Homo sapiens

<400> 1644

 Met
 Gly
 Met
 Leu
 Ile
 Ile
 Met
 Asn
 Val
 Trp
 Val
 Leu
 Phe
 Ile

 Pro
 Thr
 Arg
 Leu
 Arg
 Ile
 Asp
 Gln
 Gln
 Pro
 Val
 His
 Ile
 Lys
 Pro
 Ser

 Jo
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 Asp
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<210> 1645 <211> 256 <212> PRT <213> Homo sapiens

<400> 1645 Met Ala Ala Leu Thr Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala 10 Leu Ala Gly Asp Thr Gln Pro Arg Phe Leu Trp Gln Gly Lys Tyr Lys 20 25 Cys His Phe Phe Asn Gly Thr Glu Arg Val Gln Phe Leu Glu Arg Leu 40 Phe Tyr Asn Gln Glu Glu Phe Val Arg Phe Asp Ser Asp Val Gly Glu 55 Tyr Arg Ala Val Thr Glu Leu Gly Arg Pro Val Ala Glu Ser Trp Asn Ser Gln Lys Asp Ile Leu Glu Asp Arg Arg Gly Gln Val Asp Thr Val 90 Cys Arg His Asn Tyr Gly Val Gly Glu Ser Phe Thr Val Gln Arg Arg 105 100 Val His Pro Glu Val Thr Val Tyr Pro Ala Lys Thr Gln Pro Leu Gln 120 125 His His Asn Leu Leu Val Cys Ser Val Ser Gly Phe Tyr Pro Gly Ser 135 Ile Glu Val Arg Trp Phe Arg Asn Gly Gln Glu Glu Lys Ala Gly Val 150 155 Val Ser Thr Gly Leu Ile Gln Asn Gly Asp Trp Thr Phe Gln Thr Leu 170 165 Val Met Leu Glu Thr Val Pro Arg Ser Gly Glu Val Tyr Thr Cys Gln 180 . 185 190 Val Glu His Pro Ser Val Met Ser Pro Leu Thr Val Glu Trp Arg Ala 200 Arg Ser Glu Ser Ala Gln Ser Lys Met Leu Ser Gly Val Gly Phe 215 220 Val Leu Gly Leu Leu Phe Leu Gly Ala Gly Leu Phe Ile Tyr Phe Arg 235 230 Asn Gln Lys Gly His Ser Gly Leu Gln Pro Thr Gly Phe Leu Ser \*

<210> 1646 <211> 263 <212> PRT <213> Homo sapiens

Asp Asp Gly Arg Arg Lys Pro Gly Ile Gly Gly Arg Glu Arg Trp Asn 85 90 His Val Thr Thr Thr Lys Arg Pro Val Thr Thr Arg Ala Pro Ala 105 Asn Thr Leu Gly Asn Asp Phe Asp Leu Ala Asp Ala Leu Asp Asp Arg 120 Asn Asp Arg Asp Asp Gly Arg Arg Lys Pro Ile Ala Gly Gly Gly Gly 135 140 Phe Ser Asp Lys Asp Leu Glu Asp Ile Val Gly Gly Glu Tyr Lys 150 155 Pro Asp Lys Gly Lys Gly Asp Gly Arg Tyr Gly Ser Asn Asp Asp Pro 165 170 175 Gly Ser Gly Met Val Ala Glu Pro Gly Thr Ile Ala Gly Val Ala Ser 185 180 190 Ala Leu Ala Met Ala Leu Ile Gly Ala Val Ser Ser Tyr Ile Ser Tyr 200 205 Gln Gln Lys Lys Phe Cys Phe Ser Ile Gln Gln Gly Leu Asn Ala Asp 215 220 Tyr Val Lys Gly Glu Asn Leu Glu Ala Val Val Cys Glu Glu Pro Gln 230 235 Val Lys Tyr Ser Thr Leu His Thr Gln Ser Ala Glu Pro Pro Pro 245 250 Pro Glu Pro Ala Arg Ile \* 260 262

<210> 1647 <211> 74 <212> PRT <213> Homo sapiens

<210> 1648 <211> 58 <212> PRT <213> Homo sapiens

35 40 45 Asn Ala Met Thr Gly Gly Phe Trp Val \* 50 55 57

<210> 1649 <211> 90 <212> PRT <213> Homo sapiens

<210> 1650 <211> 113 <212> PRT <213> Homo sapiens

<400> 1650 Met Ala Leu Gly Val Pro Ile Ser Val Tyr Leu Leu Phe Asn Ala Met 10 5 Thr Ala Leu Thr Glu Glu Ala Ala Val Thr Val Thr Pro Pro Ile Thr 20 25 Ala Gln Gln Gly Asn Trp Thr Val Asn Lys Thr Glu Ala Asp Asn Ile 40 Glu Gly Pro Ile Ala Leu Lys Phe Ser His Leu Cys Leu Glu Asp His Asn Ser Tyr Cys Ile Asn Gly Ala Cys Ala Phe His His Glu Leu Glu 70 75 Lys Ala Ile Cys Arg Cys Phe Thr Gly Tyr Thr Gly Glu Arg Cys Leu 90 85 Lys Leu Lys Ser Pro Tyr Asn Val Cys Ser Gly Glu Arg Arg Pro Leu 105

<210> 1651 <211> 50 <212> PRT <213> Homo sapiens

<210> 1652 <211> 121 <212> PRT <213> Homo sapiens

<400> 1652 Met Ser Arg Ala Gly Met Leu Gly Val Val Cys Ala Leu Leu Val Trp 10 Ala Tyr Leu Ala Val Gly Lys Leu Val Val Arg Met Thr Phe Thr Glu 25 Leu Cys Thr His His Pro Trp Ser Leu Arg Cys Glu Ser Phe Cys Arg 40 Ser Arg Val Thr Ala Cys Leu Pro Ala Pro Ala Pro Trp Leu Arg Pro Phe Leu Cys Pro Met Leu Phe Ser Asp Arg Asn Pro Val Glu Cys His 70 75 Leu Phe Gly Glu Ala Val Ser Asp Pro Val Cys Lys Gly Leu Leu Pro 85 90 His Tyr Phe Trp His Pro Thr Phe Phe Pro Val Lys Ala Asn Cys Leu 100 105 Val Ser Phe Cys Pro Thr Thr Val \*

<210> 1653 <211> 111 <212> PRT <213> Homo sapiens

115

100 105 110

<210> 1654 <211> 150 <212> PRT <213> Homo sapiens

<400> 1654 Met Trp Ile Cys Arg Val Lys Gln Ala Trp Leu Pro Pro Leu Leu Ser 10 Pro Leu Gly Pro Pro Thr Pro Trp Asp Pro Phe Tyr Ala Ala Pro Ser 20 25 Pro Pro Val Trp Val Gly Ser Gly Tyr Trp Tyr Arg Gly Leu Leu Ser 40 Pro Pro Asp Gly Gly Gln Gly Ser Phe Pro Pro His Leu Cys Pro Gln Cys Pro Val Gln Ala Gln Ala Gln Ile Gly Pro Tyr Phe Arg Glu Leu 70 75 Gly Glu Pro Pro Ser Glu Thr Lys Trp Tyr Leu Asn Ser His Ser His 85 90 His Arg Ala Ala Gly Thr Gln Arg Arg Leu Arg Cys Leu Gln His Leu 105 Leu Gly Gly Gly Pro Gly Ile Gly Ser Glu Ser Pro Asn Glu Gly 120 Pro Gly Gln Val Thr His Ala Cys Asn Leu Ser Thr Leu Gly Gly Lys 130 135 Asp Val Arg Ile Thr \* 149

<210> 1655 <211> 68 <212> PRT <213> Homo sapiens

<210> 1656 <211> 61 <212> PRT <213> Homo sapiens

<210> 1657 <211> 80 <212> PRT <213> Homo sapiens

<210> 1658 <211> 160 <212> PRT <213> Homo sapiens

<400> 1658 Met Ala Phe Leu Leu Tyr His Leu Val Tyr His Ile Pro Pro Met Ala 10 Pro Val Ser Phe Val Phe Glu Thr Lys Ser Arg Ser Ala Ala Gln Ala 25 Gly Val Gln Trp His Asp Pro Gly Ser Pro Gln Pro Leu Pro Pro Arg 40 Phe Lys Arg Phe Ser Cys His Gly Leu Asn Ile Lys Phe Ala Phe Phe 55 60 Ser His Leu Lys Glu Leu His Leu Asp Ser Gly His Cys Phe Ile Phe 70 75 Ile Arg Leu Val Lys Gly Ala Val Cys Leu Ile His Val Gln Ile Arg 90 Ile Pro Ser Ala Asp Glu Asp Ile Thr Ile Leu Phe Phe Ile Val Ser 100 105 Lys His Phe Leu Glu Ser Val Phe Lys Met Leu Gln Trp Ser Gln Met 120 125 Thr Leu Ala Thr Val Lys Thr Thr Phe Ile Gly Leu Asn Glu Phe Ile 135 140 Cys Ser Pro Ser Thr Leu Pro Ser Gly Lys Lys Asn Gly Leu Ile \*

145 150 155 159

<210> 1659 <211> 90 <212> PRT <213> Homo sapiens

<210> 1660 <211> 56 <212> PRT <213> Homo sapiens

<210> 1661 <211> 74 <212> PRT <213> Homo sapiens

Asp Gly Thr Glu Gly His Tyr Pro Lys \* 65 70 73

<210> 1662 <211> 271 <212> PRT <213> Homo sapiens

<400> 1662 Met Gly Leu Gly Gln Pro Gln Ala Trp Leu Leu Gly Leu Pro Thr Ala 10 Val Val Tyr Gly Ser Leu Ala Leu Phe Thr Thr Ile Leu His Asn Val 20 25 Phe Leu Leu Tyr Tyr Val Asp Thr Phe Val Ser Val Tyr Lys Ile Asn 40 Lys Met Ala Phe Trp Val Gly Glu Thr Val Phe Leu Leu Trp Asn Ser 55 60 Leu Asn Asp Pro Leu Phe Gly Trp Leu Ser Asp Arg Gln Phe Leu Ser 70 75 Ser Gln Pro Arg Ser Gly Ala Gly Leu Ser Ser Arg Ala Val Leu 85 90 Ala Arg Val Gln Ala Leu Gly Trp His Gly Pro Leu Leu Ala Leu Ser 105 100 Phe Leu Ala Phe Trp Val Pro Trp Ala Pro Ala Gly Leu Gln Phe Leu 120 125 Leu Cys Leu Cys Leu Tyr Asp Gly Phe Leu Thr Leu Val Asp Leu His 135 His His Ala Leu Leu Ala Asp Leu Ala Leu Ser Ala His Asp Arg Thr 150 155 His Leu Asn Phe Tyr Cys Ser Leu Phe Ser Ala Ala Gly Ser Leu Ser 165 170 175 Val Phe Ala Ser Tyr Ala Phe Trp Asn Lys Glu Asp Phe Ser Ser Phe 185 Arg Ala Phe Cys Val Thr Leu Ala Val Ser Ser Gly Leu Gly Phe Leu 200 Gly Ala Thr Gln Leu Leu Arg Arg Arg Val Glu Ala Ala Arg Lys Asp 215 Pro Gly Cys Ser Gly Leu Val Val Asp Ser Gly Leu Cys Gly Glu Glu 230 235 Leu Leu Val Gly Ser Glu Glu Ala Asp Ser Ile Thr Leu Gly Arg Tyr 245 250 Leu Arg Gln Leu Ala Arg His Arg Asn Phe Leu Cys Phe Ser \* 265

<210> 1663 <211> 53 <212> PRT <213> Homo sapiens

<400> 1663
Met Pro His Ile Gln Thr Leu Leu Arg Thr Leu Phe Ala Ser His Leu
1 5 10 15
Leu Val Ser Leu Trp Gln Ser Glu Pro Met Ala Lys Pro Arg Met Arg

20 25 30

Lys Tyr Asn Thr Ser Ser Glu Tyr Leu Ser Glu Leu Asp Thr Glu Ala
35 40 45

Ser Arg Val Ser \*
50 52

<210> 1664 <211> 271 <212> PRT <213> Homo sapiens

<400> 1664

Met Gly Leu Gly Gln Pro Gln Ala Trp Leu Leu Gly Leu Pro Thr Ala 10 Val Val Tyr Gly Ser Leu Ala Leu Phe Thr Thr Ile Leu His Asn Val 20 25 Phe Leu Leu Tyr Tyr Val Asp Thr Phe Val Ser Val Tyr Lys Ile Asn 35 45 40 Lys Met Ala Phe Trp Val Gly Glu Thr Val Phe Leu Leu Trp Asn Ser 55 Leu Asn Asp Pro Leu Phe Gly Trp Leu Ser Asp Arg Gln Phe Leu Ser 70 75 Ser Gln Pro Arg Ser Gly Ala Gly Leu Ser Ser Arg Ala Val Leu 90 85 Ala Arg Val Gln Ala Leu Gly Trp His Gly Pro Leu Leu Ala Leu Ser 105 110 Phe Leu Ala Phe Trp Val Pro Trp Ala Pro Ala Gly Leu Gln Phe Leu 120 125 Leu Cys Leu Cys Leu Tyr Asp Gly Phe Leu Thr Leu Val Asp Leu His 135 140 His His Ala Leu Leu Ala Asp Leu Ala Leu Ser Ala His Asp Arg Thr 150 155 His Leu Asn Phe Tyr Cys Ser Leu Phe Ser Ala Ala Gly Ser Leu Ser 170 165 Val Phe Ala Ser Tyr Ala Phe Trp Asn Lys Glu Asp Phe Ser Ser Phe 185 Arg Ala Phe Cys Val Thr Leu Ala Val Ser Ser Gly Leu Gly Phe Leu 195 200 205 Gly Ala Thr Gln Leu Leu Arg Arg Arg Val Glu Ala Ala Arg Lys Asp 215 220 Pro Gly Cys Ser Gly Leu Val Val Asp Ser Gly Leu Cys Gly Glu Glu 230 235 Leu Leu Val Gly Ser Glu Glu Ala Asp Ser Ile Thr Leu Gly Arg Tyr 245 250 255 Leu Arg Gln Leu Ala Arg His Arg Asn Phe Leu Cys Phe Ser \* 265 260

<210> 1665

<211> 284

<212> PRT

<213> Homo sapiens

<400> 1665

Met Asp Glu Lys Ser Asn Lys Leu Leu Leu Ala Leu Val Met Leu Phe 10 Leu Phe Ala Val Ile Val Leu Gln Tyr Val Cys Pro Gly Thr Glu Cys 25 Gln Leu Leu Arg Leu Gln Ala Phe Ser Ser Pro Val Pro Asp Pro Tyr 40 Arg Ser Glu Asp Glu Ser Ser Ala Arg Phe Val Pro Arg Tyr Asn Phe 55 60 Thr Arg Gly Asp Leu Leu Arg Lys Val Asp Phe Asp Ile Lys Gly Asp 75 Asp Leu Ile Val Phe Leu His Ile Gln Lys Thr Gly Gly Thr Thr Phe Gly Arg His Leu Val Arg Asn Ile Gln Leu Glu Gln Pro Cys Glu Cys 100 105 Arg Val Gly Gln Lys Lys Cys Thr Cys His Arg Pro Gly Lys Arg Glu 120 Thr Trp Leu Phe Ser Arg Phe Ser Thr Gly Trp Ser Cys Gly Leu His 135 140 Ala Asp Trp Thr Glu Leu Thr Ser Cys Val Pro Ser Val Gly Asp Gly 150 155 Lys Arg Asp Ala Arg Leu Arg Pro Ser Arg Trp Arg Ile Phe His Ile 165 170 Leu Tyr Ala Ala Cys Thr Asp Ile Arg Gly Ser Pro Asn Thr Asn Ala 185 Gly Ala Asn Ser Pro Ser Phe Thr Lys Thr Arg Asn Thr Ser Lys Ser 200 Trp Lys Asn Phe His Tyr Ile Thr Ile Leu Gln Asp Pro Gly Ala Arg 215 220 Ser Leu Ser Glu Trp Arg Pro Val Leu Lys Arg Gly Thr Leu Glu Gly 230 235 Leu Leu Ala Cys Trp Pro Trp Lys Ala Pro Pro Pro Leu Lys Lys Leu 245 250 Ser Thr Trp Tyr Pro Gly Glu Glu Leu Val Trp Leu Ala Pro Leu Gln 265 Lys Ile Ile Gly Leu Ala Leu Leu Ile Tyr Pro \*

<210> 1666 <211> 67 <212> PRT <213> Homo sapiens

<210> 1667 <211> 79 <212> PRT <213> Homo sapiens

<210> 1668 <211> 54 <212> PRT <213> Homo sapiens

<210> 1669 <211> 119 <212> PRT <213> Homo sapiens

Glu Ile Pro Glu Gln Arg \* 115 118

> <210> 1670 <211> 116 <212> PRT <213> Homo sapiens

<400> 1670

Met Cys Leu Cys Cys Glu Cys Leu Phe His Leu Trp Lys Arg Ile 10 Asn Trp Trp Gln Gly Phe Cys Ser Phe Tyr Leu Leu Leu Trp Val Gly 25 Leu Leu Ser Phe Pro Pro Asp Pro Pro Trp Lys Ser Phe Thr Pro Ala 35 Ile Leu Phe Leu Ala Trp Gly Thr Gly Ser Ser Pro Gly Arg His Arg Phe Ser Leu Pro Thr Asp Arg Arg Pro Ser Ala His Ser Pro Phe Leu 75 70 Ser Thr Leu Gln His Ser Ile Arg Thr Leu Phe His Ser Pro Ile Arg 90 Ser Ser Arg Phe Ala Phe Val Ser Ser Leu His Ser Tyr Thr Ser Ile 100 105 Pro Ser Leu Pro 115 116

<210> 1671 <211> 70 <212> PRT <213> Homo sapiens

65 69

<210> 1672 <211> 263 <212> PRT <213> Homo sapiens

<400> 1672
Met Arg Val Leu Cys Ala Phe Pro Glu Ala Met Pro Ser Ser Asn Ser

```
10
Arg Pro Pro Ala Cys Leu Ala Pro Gly Ala Leu Tyr Leu Ala Leu Leu
           20
                              25
Leu His Leu Ser Leu Ser Ser Gln Ala Gly Asp Arg Arg Pro Leu Pro
                           40
Val Asp Arg Ala Ala Gly Leu Lys Glu Lys Thr Leu Ile Leu Leu Asp
                       55
Val Ser Thr Lys Asn Pro Val Arg Thr Val Asn Glu Asn Phe Leu Ser
                   70
                                       75
Leu Gln Leu Asp Pro Ser Ile Ile His Asp Gly Trp Leu Asp Phe Leu
               85
                                   90
Ser Ser Lys Arg Leu Val Thr Leu Ala Arg Gly Leu Ser Pro Ala Phe
                             105
           100
Leu Arg Phe Gly Gly Lys Arg Thr Asp Phe Leu Gln Phe Gln Asn Leu
                          120
                                              125
Arg Asn Pro Ala Lys Ser Arg Gly Gly Pro Gly Pro Asp Tyr Tyr Leu
                       135
Lys Asn Tyr Glu Asp Asp Ile Val Arg Ser Asp Val Ala Leu Asp Lys
                  150
                                     155
Gln Lys Gly Cys Lys Ile Ala Gln His Pro Asp Gly Met Leu Glu Pro
                                 170
              1.65
Pro Arg Glu Lys Ala Ala Gln Met His Leu Val Leu Leu Lys Glu Gln
          180
                            185
Phe Ser Asn Thr Tyr Ser Asn Leu Ile Leu Thr Glu Pro Asn Asn Tyr
                         200
                                    205
Arg Thr Met His Gly Arg Ala Val Asn Gly Ser Gln Leu Gly Lys Asp
                      215
                                         220
Tyr Ile Gln Leu Lys Ser Leu Leu Gln Pro Ile Arg Ile Tyr Ser Arg
                 230
                                      235
Ala Ser Leu Tyr Gly Pro Asm Ile Val Arg Pro Arg Lys Asm Val Ile
              245
                                  250
Ala Leu Leu Asp Gly Leu
           260 262
```

<210> 1673 <211> 156 <212> PRT <213> Homo sapiens

<400> 1673 Met Lys Trp Lys Thr Gly Val Ala Ile Phe Val Val Val Val Tyr 10 Leu Val Thr Gly Gly Leu Val Phe Arg Ala Leu Glu Gln Pro Phe Glu Ser Ser Gln Lys Asn Thr Ile Ala Leu Glu Lys Ala Glu Phe Leu Arg 40 Asp His Val Cys Val Ser Pro Gln Glu Leu Glu Thr Leu Ile Gln His 55 Ala Leu Asp Ala Asp Asn Ala Gly Val Ser Pro Ile Gly Asn Ser Ser 70 Asn Asn Ser Ser His Trp Asp Leu Gly Ser Ala Phe Phe Phe Ala Gly 90 85 Thr Val Ile Thr Thr Ile Gly Tyr Gly Asn Ile Ala Pro Ser Thr Glu 105 Gly Gly Lys Ile Phe Cys Ile Leu Tyr Ala Ile Phe Gly Phe Pro Leu 120

Phe Gly Phe Leu Leu Ala Gly Ile Glu Asp Gln Leu Gly Thr Ile Phe 130 135 140 Gly Lys Ser Ile Ala Arg Val Glu Lys Val Phe \* 145 150 155

<210> 1674 <211> 83 <212> PRT <213> Homo sapiens

<210> 1675 <211> 54 <212> PRT <213> Homo sapiens

<210> 1676 <211> 119 <212> PRT <213> Homo sapiens

<210> 1677 <211> 49 <212> PRT <213> Homo sapiens

<210> 1678 <211> 127 <212> PRT <213> Homo sapiens

<400> 1678 Met Gln Thr Lys Gly Gln Thr Trp Ala Arg Arg Ala Leu Leu Leu 10 Gly Ile Leu Trp Ala Thr Ala His Leu Pro Leu Ser Gly Thr Ser Leu Pro Gln Arg Leu Pro Arg Ala Thr Gly Asn Ser Thr Gln Cys Val Ile 40 Ser Pro Ser Ser Glu Phe Pro Glu Gly Phe Phe Thr Arg Gln Glu Arg 55 Arg Asp Gly Gly Ile Ile Ile Tyr Phe Leu Ile Ile Val Tyr Met Phe 70 Met Ala Ile Ser Ile Val Cys Asp Glu Tyr Phe Leu Pro Ser Leu Glu 90 Ile Ile Ser Glu Tyr Ile Gly Asn Lys Lys Glu Met Gln Val Leu Ile 105 Pro Gly Arg Ile Val Ser Lys Leu Lys Lys Leu Gly Phe Lys \* 120

<210> 1679

<211> 49 <212> PRT <213> Homo sapiens

<400> 1679

 Met Ile Phe Phe Ile Lys Ala Pro Leu Tyr Leu Leu Gln Ser Met Met
 1
 5
 10
 15

 Asp Cys Leu Tyr Ala Arg Arg Ile Pro Cys Ile Thr Asp Cys Ala Met
 20
 25
 30

 Ala Glu Ile Glu Lys Leu Gly Gln Lys Tyr Pro Val Ala Leu Arg Ile
 35
 40
 45

 Ala
 49

<210> 1680 <211> 58 <212> PRT <213> Homo sapiens

<210> 1681 <211> 49 <212> PRT <213> Homo sapiens

<210> 1682 <211> 78 <212> PRT <213> Homo sapiens

<210> 1683 <211> 52 <212> PRT <213> Homo sapiens

His Leu Ile \* 50 51

<210> 1684 <211> 165 <212> PRT <213> Homo sapiens

<400> 1684 Met Pro Ala Pro Pro Leu Pro Gly Gly Trp Asn Thr Trp Gly Pro Ser . 5 10 Leu Ser Leu Pro Leu Leu Leu Gly Ala Val Ala Met Ala Leu Gly Val Arg Pro Pro Gly Gln Val Gly Leu Ser Pro Ile Ala Thr Ala Ser 40 Thr Val Gly Val Pro Arg Cys Leu Gln Thr Ala Phe Arg Gly Asp Ala 55 Gly Trp His Ser Cys Ala Gln Gln Gly Ala Cys Val Ala Leu His Pro 70 75 Ser Glu Arg Arg Leu Gly Ile Ser Asp Glu Ala His Ser Arg Ser Arg 90 · 95 85 Trp Gly Glu Asp Ser Pro Ser Pro Leu Thr Gly Pro Pro Leu Ser 105 110 Pro Ser Pro Pro Asp Cys Leu Ser Leu Pro Arg Leu Thr Pro Leu Arg 115 120 125 Leu Pro Pro Pro Pro Phe Pro Phe Leu Gly Pro Ile Pro Ser Leu Pro 135 140 Pro Pro Pro Ser Pro Pro Pro Gln Pro Pro Ala Thr Ala Pro Pro 155

Ser Leu Arg Phe \* 164

<210> 1685 <211> 153 <212> PRT <213> Homo sapiens

<400> 1685 Met Gly Thr Ala Ala Leu Gly Pro Val Trp Ala Ala Leu Leu Leu Phe 10 Leu Leu Met Cys Glu Ile Pro Met Val Glu Leu Thr Phe Asp Arg Ala 20 25 Val Ala Ser Gly Cys Gln Arg Cys Cys Asp Ser Glu Asp Pro Leu Asp 40 Pro Ala His Val Ser Ser Ala Ser Ser Ser Gly Arg Pro His Ala Leu 55 Pro Glu Ile Arg Pro Tyr Ile Asn Ile Thr Ile Leu Lys Ala Gln Arg 70 Ala Gln His His Ala Glu Pro Glu Cys Asp Ala Gly Pro Gly Leu Arg 90 Gly Pro Arg Leu Gly Ala Ala Leu Gln Ala Pro Ala Arg Glu Arg His 105 Leu Gln Gln Arg Leu Arg His Leu His His Leu Gln Arg Pro Pro His 120 125 Gln Gly Arg Gly Arg Leu Arg Ala Ser Gly Pro Pro Ser Arg Leu Glu 135 Ser Ser Ala Asp Pro Ala Pro Ala \*

<210> 1686 <211> 141 <212> PRT <213> Homo sapiens

150

<400> 1686 Met Arg Arg Thr Ala Phe Ile Leu Gly Ser Gly Leu Leu Ser Phe Val Ala Phe Trp Asn Ser Val Thr Trp His Leu Gln Arg Phe Trp Gly Ala 20 25 Ser Gly Tyr Phe Trp Gln Ala Gln Trp Glu Arg Leu Leu Thr Thr Phe 35 40 Glu Gly Lys Glu Trp Ile Leu Phe Phe Ile Gly Ala Ile Gln Val Pro 55 Cys Leu Phe Phe Trp Ser Phe Asn Gly Leu Leu Val Val Asp Thr 70 75 Thr Gly Lys Pro Asn Phe Ile Ser Arg Tyr Arg Ile Gln Val Gly Lys 90 Asn Glu Pro Val Asp Pro Val Lys Leu Arg Gln Ser Ile Arg Thr Val 105 Leu Phe Asn Gln Cys Met Ile Ser Phe Pro Met Gly Gly Leu Pro Leu 120 Ser Leu Pro Gln Met Val Glu Arg Pro Leu Thr Pro \*

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130 135 140

<210> 1687 <211> 61 <212> PRT <213> Homo sapiens

<210> 1688 <211> 68 <212> PRT <213> Homo sapiens

<400> 1688

<210> 1689 <211> 74 <212> PRT <213> Homo sapiens

<210> 1690 <211> 114 <212> PRT <213> Homo sapiens

<400> 1690 Met His Met Cys Ala Phe Leu His Val Trp Thr Cys Ala Cys Met His 10 Leu Cys Val Cys Val Cys Ala Glu Thr Gly Lys Gly Val Lys Val Leu 20 25 Val Arg Glu Pro Gly Ser Phe Leu Phe Pro Asn Leu Ser Cys Ser Lys 40 Glu Gly Trp Gly Trp Gly Gln Pro Leu Leu Lys Val Ile Gly Glu Glu 55 60 Arg Phe Ser Asp Ser Glu Val Thr Ala Ser Val Ala Gln Ala Val Ser 70 75 Leu Val Thr Val Ile Leu Gln Phe Ser Asp Pro His Val Ser Phe Arg Gly Lys Arg Lys Lys Gly Thr Leu Trp Trp Val Leu Gly Gly Lys Arg 100 105 Lys \* 113

<210> 1691 <211> 69 <212> PRT <213> Homo sapiens

<210> 1692 <211> 103 <212> PRT <213> Homo sapiens

<210> 1693 <211> 48 <212> PRT <213> Homo sapiens

<210> 1694 <211> 92 <212> PRT <213> Homo sapiens

<210> 1695 <211> 83 <212> PRT <213> Homo sapiens

<210> 1696 <211> 159 <212> PRT <213> Homo sapiens

<400> 1696 Met Leu Trp Leu Phe Gln Ser Leu Leu Phe Val Phe Cys Phe Gly Pro 10 5 Gly Asn Val Val Ser Gln Ser Ser Leu Thr Pro Leu Met Val Asn Gly 25 Ile Leu Gly Glu Ser Val Thr Leu Pro Leu Glu Phe Pro Ala Gly Glu Lys Val Asn Phe Ile Thr Trp Leu Phe Asn Glu Thr Ser Leu Ala Phe 55 Ile Val Pro His Glu Thr Lys Ser Pro Glu Ile His Val Thr Asn Pro 70 75 Lys Gln Gly Lys Arg Leu Asn Phe Thr Gln Ser Tyr Ser Leu Gln Leu 90 Ser Asn Leu Lys Met Glu Asp Thr Gly Ser Tyr Arg Ala Gln Ile Ser 105 Thr Lys Thr Ser Ala Lys Leu Ser Ser Tyr Thr Leu Arg Ile Leu Thr 120 Leu Tyr Pro Ile Val Gly Asn Gly Ile Trp Gly Asn Lys Asn Phe Leu 135 140 Thr Thr Leu Ala Arg Gly Asn Val Lys Leu Asp Gly Leu His Glu 145

<210> 1697 <211> 105 <212> PRT <213> Homo sapiens

40 Pro Gln Gln Thr Thr Val Leu Asp Leu Arg Phe Asn Arg Ile Arg Glu 55 Ile Pro Gly Ser Ala Phe Lys Lys Leu Lys Asn Leu Asn Thr Leu Tyr 75 65 70 Leu Tyr Lys Asn Glu Ile His Ala Leu Asp Lys Gln Thr Phe Lys Gly 85 Leu Ile Ser Leu Glu His Leu Tyr Ile 100 .

<210> 1698 <211> 195 <212> PRT

<213> Homo sapiens

<400> 1698 Met Pro Ser Trp Ile Gly Ala Val Ile Leu Pro Leu Leu Gly Leu Leu Leu Ser Leu Pro Ala Gly Ala Asp Val Lys Ala Arg Ser Cys Gly Glu 25 Val Arg Gln Ala Tyr Gly Ala Lys Gly Phe Ser Leu Ala Asp Ile Pro 40 45 Tyr Gln Glu Ile Ala Gly Glu His Leu Arg Ile Cys Pro Gln Glu Tyr 55 60 Thr Cys Cys Thr Thr Glu Met Glu Asp Lys Leu Ser Gln Gln Ser Lys 70 75 Leu Glu Phe Glu Asn Leu Val Glu Glu Thr Ser His Phe Val Arg Thr 85 90 Thr Phe Val Ser Arg His Lys Lys Phe Asp Glu Phe Phe Arg Glu Leu 105 Leu Glu Asn Ala Glu Lys Ser Leu Asn Asp Met Phe Val Arg Thr Tyr Gly Met Leu Tyr Met Gln Asn Ser Glu Val Phe Gln Asp Leu Phe Thr 135 140 Glu Leu Lys Arg Tyr Tyr Thr Gly Gly Asn Val Asn Leu Glu Glu Met 150 155 Leu Asn Asp Phe Trp Ala Arg Leu Leu Glu Arg Met Phe Gln Leu Ile 165 170 Asn Pro Gln Tyr Pro Phe Ser Glu Gly Phe Leu Gly Met Cys Glu Gln 185 Ile Pro \*

<210> 1699 <211> 97 <212> PRT <213> Homo sapiens

194

<400> 1699 Met Asp Ser Pro Trp Ala Gly Leu Leu Trp Leu Leu Pro Thr Leu Trp 10 Ser Ser Phe Pro Ala Pro Ala Cys Trp Pro Ser Ser Ser Ser Ser

 Pro
 Val
 Cys
 Ala
 Ala
 Asn
 Gly
 Ala
 Met
 Ser
 Ala
 Ser
 Arg
 Asn
 Leu
 Arg

 Thr
 Leu
 Lys
 Gly
 Arg
 Thr
 Ala
 Pro
 Gly
 Ser
 Thr
 Leu
 Pro
 Leu
 Arg
 Arg
 Arg

 Arg
 Pro
 Pro
 Pro
 His
 Ser
 Arg
 Cys
 Leu
 Met
 Ser
 Thr
 Phe
 Ser
 Arg
 Trp

 65
 Thr
 Fro
 Cys
 Gln
 Cys
 Leu
 Pro
 Arg
 Ser
 Leu
 His
 Thr
 Gln
 Thr

 Leu
 Arg
 Ser
 Leu
 Pro
 Arg
 Ser
 Leu
 His
 Thr
 Gln
 Thr

 Leu
 Arg
 Ser
 Leu
 Pro
 Arg
 Ser
 Leu
 His
 Thr
 Gln
 Thr

 Leu
 Arg
 Ser
 Fro
 Cys
 Leu
 Pro
 Arg
 Ser
 Leu
 His
 Thr
 Hi

<210> 1700 <211> 129 <212> PRT <213> Homo sapiens

<400> 1700 Met Gly Trp Ala Pro Leu Leu Thr Leu Leu Ala His Cys Thr Gly 10 Ser Trp Ala Gln Ser Val Leu Thr Gln Pro Pro Ser Glu Ser Glu Ala 25 Pro Gly Gln Trp Val Asn Ile Ser Cys Thr Gly Ser Gly Ser Asn Leu Gly Ala Gly Phe Asp Val Gln Trp Tyr Gln Leu Ile Pro Gly Thr Ala 55 Pro Lys Leu Ile Phe Asn Asn Asn Gln Pro Ser Gly Val Pro 75 70 Asp Arg Phe Ser Ala Ser Lys Ser Gly Thr Ser Ala Ser Leu Thr Ile Asn Asp Leu Gln Pro Glu Asp Glu Ser Glu Tyr Tyr Cys Leu Ala Met 105 Thr Ala Ala Ser Leu Val Ser Ser Glu Leu Gly Pro Lys Ser Pro Ala 120 125

<210> 1701 <211> 219 <212> PRT <213> Homo sapiens

85 90 Arg Trp Asn Glu Ile Phe Gly Asn Asn Leu Gly Ala Leu Ala Met Phe 105 100 Cys Val Leu Tyr Pro Glu Asn Ile Glu Ala Arg Asp Met Ala Lys Asp 120 125 Tyr Met Glu Arg Met Ala Ala Gln Pro Ser Trp Leu Val Lys Asp Ala 135 140 Pro Trp Asp Glu Val Pro Leu Ala His Ser Leu Val Gly Phe Ala Thr 150 155 Ala Tyr Asp Phe Leu Tyr Asn His Leu Ser Lys Thr Gln Gln Glu Lys 165 170 175 Phe Leu Glu Val Ile Ala Asn Ala Ser Gly Tyr Met Phe Val Thr Leu 180 190 185 Ile Leu Gly Ala Asp Gly Asp Ser Asn Thr Cys Thr Ile Ile Ser Pro 200 205 Pro Thr Val Trp Leu Cys Ser Arg Glu Ala 215

<210> 1702 <211> 86 <212> PRT

<213> Homo sapiens

<210> 1703 <211> 229 <212> PRT <213> Homo sapiens

Phe Cys Asp Met Thr Ser Gly Gly Gly Trp Thr Leu Val Ala Ser Val His Glu Asn Asp Met His Gly Lys Cys Thr Val Gly Asp Arg Trp 100 1.05 Ser Ser Gln Gln Gly Asn Lys Ala Asp Tyr Pro Glu Gly Asp Gly Asn 120 Trp Ala Asn Tyr Asn Thr Phe Gly Ser Ala Glu Ala Ala Thr Ser Asp 135 140 Asp Tyr Lys Asn Pro Gly Tyr Tyr Asp Ile Gln Ala Lys Asp Leu Gly 150 155 Ile Trp His Val Pro Asn Lys Ser Pro Met Gln His Trp Arg Asn Ser 165 170 Ala Leu Leu Arg Tyr Arg Thr Asn Thr Gly Phe Leu Gln Arg Leu Gly 185 His Asn Leu Phe Gly Ile Tyr Gln Lys Tyr Pro Val Lys Tyr Arg Ser 200 Gly Lys Cys Trp Asn Asp Asn Gly Pro Ala Ile Pro Trp Val Tyr Asp 215 Phe Gly Glu Ala \* 228

<210> 1704 <211> 202 <212> PRT <213> Homo sapiens

<400> 1704 Met Val Phe Pro Val Met Tyr Asn Leu Ile Ile Leu Val Cys Arg Ala 5 10 Cys Phe Pro Asp Leu Gln His Gly Tyr Leu Val Ala Trp Leu Val Leu 20 25 Asp Tyr Thr Ser Asp Leu Leu Tyr Leu Leu Asp Met Val Val Arg Phe 40 His Thr Gly Phe Leu Glu Gln Gly Ile Leu Val Val Asp Lys Gly Arg Ile Ser Ser Arg Tyr Val Arg Thr Trp Ser Phe Phe Leu Asp Leu Ala 70 Ser Leu Met Pro Thr Asp Val Val Tyr Val Arg Leu Gly Pro His Thr 85 90 Pro Thr Leu Arg Leu Asn Arg Phe Leu Arg Ala Pro Arg Leu Phe Glu 105 Ala Phe Asp Arg Thr Glu Thr Arg Thr Ala Tyr Pro Asn Ala Phe Cys 120 Ile Gly Lys Leu Met Leu Tyr Ile Phe Gly Arg Ile His Trp Asn Asn 135 Cys Leu Tyr Phe Ser Leu Ser Arg Tyr Leu Gly Phe Gly Arg Glu Pro 150 155 Met Gly Val Pro Arg Thr Pro Ala Pro Thr Trp Val Leu Thr Ala Arg 170 Gly Gly Pro Val Thr Ser Tyr Lys Leu Phe Asn Phe Phe His Pro Leu 180 185 Asp Thr Trp Ile Ile Gln Gly Gly Glu \*

<210> 1705 <211> 58 <212> PRT <213> Homo sapiens

<400> 1705

<210> 1706 <211> 55 <212> PRT <213> Homo sapiens

<210> 1707 <211> 139 <212> PRT <213> Homo sapiens

<400> 1707 Met Leu Glu Cys Ala Phe Ile Val Leu Trp Leu Gln Leu Gly Trp Leu 10 Ser Gly Glu Asp Gln Val Thr Gln Ser Pro Glu Ala Leu Arg Leu Gln 20 25 Glu Gly Glu Ser Ser Ser Leu Asn Cys Ser Tyr Thr Val Ser Gly Leu 40 Arg Gly Leu Phe Trp Tyr Arg Gln Asp Pro Gly Lys Gly Pro Glu Phe 55 Leu Phe Thr Leu Tyr Ser Ala Gly Glu Glu Lys Glu Lys Glu Arg Leu 70 75 Lys Ala Thr Leu Thr Lys Lys Glu Ser Phe Leu His Ile Thr Ala Pro 85 90 Lys Pro Glu Asp Ser Ala Thr Tyr Leu Cys Ala Val Gln Ala Gln Phe 100 105 His Ser Gly Gly Gly Ala Asp Gly Leu Thr Phe Gly Lys Gly Thr Arg

Leu Lys Val Leu Ala Leu Tyr Pro Glu Pro \* 130 135 138

<210> 1708 <211> 59 <212> PRT <213> Homo sapiens

<400> 1708

<210> 1709 <211> 81 <212> PRT <213> Homo sapiens

 Arg Leu Pro Trp Glu Leu Leu Leu Val Leu Gln Ser Phe Ile Leu Cys 1

 Leu Ala Asp Asp Ser Thr Leu His Gly Pro Ile Phe Ile Gln Glu Pro 25

 Ser Pro Val Met Phe Pro Leu Asp Ser Glu Glu Lys Lys Ala Lys Leu 35

 Asn Cys Glu Asp Gly Asp Gly Asp Gly Asp Gly Asp Gly Glu Cys Glu Glu Phe Glo Glu Cys Glu Asp Gly Ala Asp Ala Asp Fro Lys Pro His Ile Arg Trp Lys Leu 50

 Asn Gly Ala Asp Ala Asp Thr Gly Met Glu Phe Leu Leu Gln Arg Cys 65

<210> 1710 <211> 399 <212> PRT. <213> Homo sapiens

```
55
Ile Asn Leu Thr Trp His Lys Asn Asp Ser Ala Arg Thr Val Pro Gly
                  70
                                      75
Glu Glu Glu Thr Arg Met Trp Ala Gln Asp Gly Ala Leu Trp Leu Leu
              85
                                  90
Pro Ala Leu Gln Glu Asp Ser Gly Thr Tyr Val Cys Thr Thr Arg Asn
                             105
          100
Ala Ser Tyr Cys Asp Lys Met Ser Ile Glu Leu Arg Val Phe Glu Asn
               120
                                           125
Thr Asp Ala Phe Leu Pro Phe Ile Ser Tyr Pro Gln Ile Leu Thr Leu
                      135
                                       140
Ser Thr Ser Gly Val Leu Val Cys Pro Asp Leu Ser Glu Phe Thr Arg
                  150
                                     155
Asp Lys Thr Asp Val Lys Ile Gln Trp Tyr Lys Asp Ser Leu Leu Leu
              165
                                 170
Asp Lys Asp Asn Glu Lys Phe Leu Ser Val Arg Gly Thr Thr His Leu
                             185
                                                190
Leu Val His Asp Val Ala Leu Glu Asp Ala Gly Tyr Tyr Arg Cys Val
                         200
                                            205
Leu Thr Phe Ala His Glu Gly Gln Gln Tyr Asn Ile Thr Arg Ser Ile
                     215
                                        220
Glu Leu Arg Ile Lys Lys Lys Glu Glu Thr Ile Pro Val Ile Ile
                 230
                                    235
Ser Pro Leu Lys Thr Ile Ser Ala Ser Leu Gly Ser Arg Leu Thr Ile
              245
                                 250
Pro Cys Lys Val Phe Leu Gly Thr Gly Thr Pro Leu Thr Thr Met Leu
           260
                              265
Trp Trp Thr Ala Asn Asp Thr His Ile Glu Ser Ala Tyr Pro Gly Gly
                          280
Arg Val Thr Glu Gly Pro Arg Gln Glu Tyr Ser Glu Asn Asn Glu Asn
                     295
                                         300
Tyr Ile Glu Val Pro Leu Ile Phe Asp Pro Val Thr Arg Glu Asp Leu
                 310
                                     315
His Met Asp Phe Lys Cys Val Val His Asn Thr Leu Ser Phe Gln Thr
              325
                                 330
Leu Arg Thr Thr Val Lys Glu Ala Ser Ser Thr Phe Ser Trp Gly Ile
          340
                             345
Val Leu Ala Pro Leu Ser Leu Ala Phe Leu Val Leu Gly Gly Ile Trp
       355 . 360
                                            365
Met His Arg Arg Cys Lys His Arg Thr Gly Lys Ala Asp Gly Leu Thr
                      375
                                        380
Val Leu Trp Pro His His Gln Asp Phe Gln Ser Tyr Pro Lys *
385
                  390
                                     395
```

<210> 1711 <211> 254 <212> PRT <213> Homo sapiens

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Ile Ser Cys Pro His Glu Cys Phe Glu Ala Ile Leu Ser Leu Asp Thr 55 Gly Tyr Arg Ala Pro Val Thr Leu Val Arg Lys Gly Cys Trp Thr Gly . 75 70 Pro Pro Ala Gly Gln Thr Gln Ser Asn Ala Asp Ala Leu Pro Pro Asp 85 90 Tyr Ser Val Val Arg Gly Cys Thr Thr Asp Lys Cys Asn Ala His Leu 100 105 Met Thr His Asp Ala Leu Pro Asn Leu Ser Gln Ala Pro Asp Pro Pro 120 125 Thr Leu Ser Gly Leu Glu Cys Tyr Ala Cys Ile Gly Val His Gln Asp 135 140 Asp Cys Ala Ile Gly Arg Ser Arg Arg Val Gln Cys His Gln Asp Gln 150 155 Thr Ala Cys Phe Gln Gly Asn Gly Arg Met Thr Val Gly Asn Phe Ser 165 170 Val Pro Val Tyr Ile Arg Thr Cys His Arg Ala Leu Leu His His Leu 180 185 Met Gly Thr Thr Ser Pro Trp Thr Ala Ile Gly Pro Pro Arg Gly Ser 200 195 Cys Cys Glu Gly Tyr Leu Cys Asn Arg Lys Ser Met Thr Gln Pro Phe 215 Thr Ser Ala Ser Ala Thr Thr Pro Pro Arg Ala Leu Gln Val Leu Ala 230 235 Leu Leu Leu Pro Val Leu Leu Val Gly Leu Ser Ala \* 245 250

<210> 1712 <211> 124 <212> PRT <213> Homo sapiens

<400> 1712

Met Thr Trp Leu Leu Val Ala Tyr Ala Asp Phe Val Val Thr Phe Val 10 Met Leu Leu Pro Ser Lys Asp Phe Trp Tyr Ser Val Val Asn Gly Val 20 25 Ile Phe Asn Cys Leu Ala Val Leu Ala Leu Ser Ser His Leu Arg Thr 35 40 45 Met Leu Thr Asp Pro Glu Lys Ser Ser Asp Cys Arg Pro Ser Ala Cys 55 Thr Val Lys Thr Gly Leu Asp Pro Thr Leu Val Gly Ile Cys Gly Glu 70 Gly Thr Glu Ser Val Gln Ser Leu Leu Gly Ala Val Pro Lys Gly 90 Asn Ala Thr Lys Glu Tyr Met Asp Glu Leu Ala Ala Glu Ala Arg Gly 105 100 Ser His Leu Gln Val Pro Gln Val Leu Leu Tyr \* 123 115 120

<210> 1713 <211> 214 <212> PRT <213> Homo sapiens

<400> 1713 Met Leu His Leu Val Phe Ile Leu Pro Ser Leu Met Leu Leu Ile Pro 5 10 His Ile Leu Leu Glu Asn Phe Ala Ala Ile Pro Gly His Arg Cys 20 25 Trp Val His Met Leu Asp Asn Asn Thr Gly Ser Gly Asn Glu Thr Gly 40 Ile Leu Ser Glu Asp Ala Leu Leu Arg Ile Ser Ile Pro Leu Asp Ser 60 Asn Leu Arg Pro Glu Lys Cys Arg Arg Phe Val His Pro Gln Trp Gln 70 75 Leu Leu His Leu Asn Gly Thr Ile His Ser Thr Ser Glu Ala Asp Thr 85 90 Glu Pro Cys Val Asp Gly Trp Val Tyr Asp Gln Ser Tyr Phe Pro Ser 100 105 110 Thr Ile Val Thr Lys Trp Asp Leu Val Cys Asp Tyr Gln Ser Leu Lys 120 125 Ser Val Val Gln Phe Leu Leu Leu Thr Gly Met Leu Val Gly Gly Ile 135 140 Ile Gly Gly His Val Ser Asp Arg Trp Leu Val Glu Ser Ala Arg Trp 150 **155** . Leu Ile Ile Thr Asn Lys Leu Asp Glu Gly Leu Lys Ala Leu Arg Lys 165 170 175 Val Ala Arg Thr Asn Gly Ile Lys Asn Ala Glu Arg Asn Pro Glu His 185 190 Arg Gly Cys Lys Ile His His Ala Gly Gly Ala Gly Cys Ser Thr Asp 195 200 Gln Asn Tyr Cys Val \* 213

<210> 1714 <211> 178 <212> PRT <213> Homo sapiens

<400> 1714

Met Ala Ala Ser Trp Ser Leu Leu Val Thr Leu Arg Pro Leu Ala Gln 10 Ser Pro Leu Arg Gly Arg Cys Val Gly Cys Gly Ala Trp Ala Ala Ala Leu Ala Pro Leu Ala Thr Ala Pro Gly Lys Pro Phe Trp Lys Ala Tyr 40 Thr Val Gln Thr Ser Glu Ser Met Thr Pro Thr Ala Thr Ser Glu Thr 55 Tyr Leu Lys Ala Leu Ala Val Cys His Gly Pro Leu Asp His Tyr Asp 65 75 Phe Leu Ile Lys Ala His Glu Leu Lys Asp Asp Glu His Gln Arg Arg 85 Val Ile Gln Cys Leu Gln Lys Leu His Glu Asp Leu Lys Gly Tyr Asn 100 105 Ile Glu Ala Glu Gly Leu Phe Phe Lys Ala Phe Phe Lys Glu Gln Thr 120 125 Ser Lys Gly Pro Val Cys Leu Trp Arg Cys Trp Tyr Arg Lys Asn Asn

WO 01/54477 PCT/US01/02687.

<210> 1715 <211> 76 <212> PRT <213> Homo sapiens

<210> 1716 <211> 83 <212> PRT <213> Homo sapiens

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<210> 1717 <211> 57 <212> PRT <213> Homo sapiens

<400> 1717
Met Ala Leu Phe Phe Leu Ala Leu Asn Phe Trp Lys Val Gly Met Ala

<210> 1718 <211> 76 <212> PRT <213> Homo sapiens

<210> 1719 <211> 71 <212> PRT <213> Homo sapiens

<210> 1720 <211> 101 <212> PRT <213> Homo sapiens

 Phe
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 Gly
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 Ala
 Ser
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 Thr
 Gln
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 Arg
 Pro
 Trp
 Ala

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<210> 1722 <211> 70 <212> PRT <213> Homo sapiens

<210> 1723 <211> 54 <212> PRT <213> Homo sapiens

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<210> 1724 <211> 60 <212> PRT

<213> Homo sapiens

<210> 1725 <211> 63 <212> PRT <213> Homo sapiens

<210> 1726 <211> 57 <212> PRT <213> Homo sapiens

Ser Gln Arg Leu Lys Glu Glu Glu \* 50 55 56

<210> 1727

<211> 46

<212> PRT

<213> Homo sapiens

<400> 1727

<210> 1728

<211> 46

<212> PRT

<213> Homo sapiens

<400> 1728

<210> 1729

<211> 49

<212> PRT

<213> Homo sapiens

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<212> PRT

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<210> 1732 <211> 102 <212> PRT <213> Homo sapiens

<400> 1732 Met Val Ser Lys Phe Leu Leu Ser His Leu Val Leu Ala Val Pro Leu 5 10 Arg Val Leu Leu Val Leu Trp Ala Leu Cys Val Gly Leu Ser Arg Val 20 25 Met Ile Gly Arg His His Val Thr Asp Val Leu Ser Gly Phe Val Ile 40 Gly Tyr Leu Gln Phe Arg Met Met Glu Lys Val Ser Met Gln Tyr Lys 55 60 Thr Cys Arg Met Leu Ile Phe Val Trp Arg Arg Ala Arg Arg Pro Thr 70 His Thr Phe Glu Gly Arg Leu Val Ser Lys Lys Gly Gln Asp Leu Ala 90 Arg Trp Leu Ser Leu \* 100 101 .

<210> 1733 <211> 139 <212> PRT <213> Homo sapiens

<400> 1733 Met Lys Phe Thr Thr Leu Leu Phe Leu Ala Ala Val Ala Gly Ala Leu 5 10 Val Tyr Ala Glu Asp Ala Ser Ser Asp Ser Thr Gly Ala Asp Pro Ala 25 Gln Glu Ala Gly Thr Ser Lys Pro Asn Glu Glu Ile Ser Gly Pro Ala 40 Glu Pro Ala Ser Pro Pro Glu Thr Thr Thr Ala Gln Glu Thr Ser 55 Ala Ala Ala Val Gln Gly Thr Ala Lys Val Thr Ser Ser Arg Gln Glu 70 75 Leu Asn Pro Leu Lys Ser Ile Val Glu Lys Ser Ile Leu Leu Thr Glu 90 Gln Ala Leu Ala Lys Ala Gly Lys Gly Met His Gly Gly Val Pro Gly 105 Gly Lys Gln Phe Ile Glu Asn Gly Ser Glu Phe Ala Gln Lys Leu Leu 120 115 Lys Lys Phe Ser Leu Leu Lys Pro Trp Ala \* 135

<210> 1734 <211> 60 <212> PRT <213> Homo sapiens

35 40 45
Gln Leu Val Cys Trp Ile Leu Thr Phe Phe \*
50 55 59

<210> 1735 <211> 73 <212> PRT

<213> Homo sapiens

<400> 1735

<210> 1736 <211> 65 <212> PRT <213> Homo sapiens

<210> 1737 <211> 47 <212> PRT <213> Homo sapiens

<210> 1738 <211> 107 <212> PRT <213> Homo sapiens

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<210> 1739 <211> 90 <212> PRT <213> Homo sapiens

<210> 1740 <211> 57 <212> PRT <213> Homo sapiens

| See Fig. 120 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 | See Fig. 25 |

<210> 1741 <211> 49 <212> PRT

<213> Homo sapiens

<210> 1742 <211> 87 <212> PRT <213> Homo sapiens

<400> 1742 Met Ser Phe Val Lys Ile Leu Ile Trp Glu Leu Phe Ile Ala Cys Phe 5 10 Pro Gln Gly Pro Leu Val His Ser Gly Lys Met Leu Lys His Gly Leu 20 25 Asp Trp His Arg Thr Leu Leu Gln Lys His Pro Cys Ile Leu Phe Phe 40 Ser Phe Leu Lys Trp Asn Leu Ala Leu Ser Pro Trp Met Glu Gly Ser 55 60 Gly Ala Ile Ser Ala His Cys Asn Leu Cys Leu Leu Gly Ser Arg Asp 70 Ala Pro Ala Ser Val Ser 85 86

<210> 1743 <211> 49 <212> PRT <213> Homo sapiens

Gly Trp Leu Asn Glu Leu Lys Thr Ser Leu Lys Tyr Ile Arg Leu Arg 35 40 45 48

<210> 1744 <211> 57 <212> PRT <213> Homo sapiens

<210> 1745 <211> 96 <212> PRT <213> Homo sapiens

<400> 1745 Met Asn Gln Leu Ser Phe Leu Leu Phe Leu Ile Ala Thr Thr Arg Gly 1 5 10 Trp Ser Thr Asp Glu Ala Asn Thr Tyr Phe Leu Glu Cys Thr Cys Ser 20 25 Trp Ser Pro Ser Leu Pro Lys Ser Cys Pro Glu Ile Lys Asp Gln Cys 40 45 Pro Ser Ala Phe Asp Gly Leu Tyr Phe Ile Arg Thr Glu Asn Ala Val 55 Ile His His Thr Phe Cys Val Met Thr Ser Ala Gly Cys Phe Trp Ile 70 75 Leu Lys Val Thr Val His Asn Tyr Asp Leu Thr Thr Asp Thr Pro \*

<210> 1746 <211> 53 <212> PRT <213> Homo sapiens

35 40 45 Lys Leu Thr Ser Val 50 53

<210> 1747 <211> 49 <212> PRT <213> Homo sapiens

<210> 1748 <211> 196 <212> PRT <213> Homo sapiens

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<400> 1748 Met Ala Met Leu Pro Phe Pro Ile Phe Leu Val Leu Leu Leu Arg Gly 5 10 . 15 Leu Val Leu Trp Thr Pro Ala Ser Ser Gly Thr Ile Met Pro Glu Glu 20 25 Arg Lys Thr Glu Ile Glu Arg Glu Thr Glu Thr Glu Ser Glu Thr Val Ile Gly Thr Glu Lys Glu Asn Ala Pro Glu Arg Glu Arg Gly Ser Val 55 Ile Thr Val Leu His Gln Val Phe Ser Thr Ala Met Lys Asn Asp Thr 70 Asp Thr Gly Asn Met Gln Lys Glu Val Met Ser Val Thr Glu Gln Val 90 Glu Lys Lys Lys Asn Asp Ile Glu Lys Asp Asp Thr Gly Arg Lys Arg 105 Lys Pro Asp Ile Ser Leu Leu Glu Val Ile Val Asp Val Ala Met Lys 115 120 Val Lys Lys Glu Ile Val Thr Gly Asp Thr Asn Thr Lys Asn Leu Lys 135 140 Glu Ala Lys Lys Glu Lys Lys Arg Ala Val Ser Leu Pro Leu Asn Arg 150 155 160 Arg Ala Pro Lys Leu His Leu Gln Asn Arg His Gly Phe Gly Leu Leu 170 . 175 Cys Ile Leu Val Pro Glu Val Asp Thr Ile Asn Leu Val Ile Phe Leu Asp Asn Val \* 195

<210> 1749 <211> 46 <212> PRT <213> Homo sapiens

<210> 1750 <211> 82 <212> PRT <213> Homo sapiens

<400> 1750 Met Glu Leu Val Arg Arg Leu Met Pro Leu Thr Leu Leu Ile Leu Ser 5 10 Cys Leu Ala Glu Leu Thr Met Ala Glu Ala Glu Gly Asn Ala Ser Cys 20 25 Thr Val Ser Leu Gly Gly Ala Asn Met Ala Glu Thr His Lys Ala Met 35 40 Ile Leu Gln Leu Asn Pro Ser Glu Asn Cys Thr Trp Thr Ile Glu Arg Pro Glu Asn Lys Ser Ile Arg Ile Ile Phe Cys Tyr Val Gln Leu Gly 70 75 Ser Glu 82

<210> 1751 <211> 94 <212> PRT <213> Homo sapiens

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<210> 1752
<211> 143
<212> PRT
<213> Homo sapiens
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<400> 1752 Met Asp Thr Trp Leu Val Cys Trp Ala Ile Phe Ser Leu Leu Lys Ala 10 Gly Leu Thr Glu Pro Glu Val Thr Gln Thr Pro Ser His Gln Val Thr 25 Gln Met Gly Gln Glu Val Ile Leu Arg Cys Val Pro Ile Ser Asn His 35 Leu Tyr Phe Tyr Trp Tyr Arg Gln Ile Leu Gly Gln Lys Val Glu Phe 50 . 55 60 : Leu Val Ser Phe Tyr Asn Asn Glu Ile Ser Glu Lys Ser Glu Ile Phe · 70 75 Asp Asp Gln Phe Ser Val Glu Arg Pro Asp Gly Ser Asn Phe Thr Leu 85 90 Lys Ile Arg Ser Thr Lys Leu Glu Asp Ser Ala Met Tyr Phe Cys Ala 100 105 Ser Ser Glu Arg Gly Ser Gly Ala Asn Val Leu Thr Phe Gly Ala Gly 120 125

Ser Arg Leu Thr Val Leu Glu Asp Leu Lys Asn Val Phe Pro Pro

140

135

<210> 1753 <211> 64 <212> PRT <213> Homo sapiens

<210> 1754 <211> 124 <212> PRT <213> Homo sapiens

Val Ser Leu Gly Glu Thr Ala Thr Ile Asp Cys Arg Ser Ser Gln Ser 40 Val Leu Tyr His Ala Asn Asn Lys Asn Tyr Leu Thr Trp Tyr Gln Gln 55 60 Arg Pro Arg Gln Ser Pro Lys Val Leu Ile Phe Trp Ala Ser Thr Arg 70 75 Glu Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp 85 90 Tyr Ser Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Thr Tyr 100 105 Tyr Cys Gln Gln Tyr Tyr Asp Ser Pro Ile Thr Phe 120

<210> 1755 <211> 111 <212> PRT <213> Homo sapiens

<400> 1755 Met Gln Ala Thr Ser Asn Leu Leu Asn Leu Leu Leu Ser Leu Phe 5 10 Ala Gly Leu Asn Pro Ser Lys Thr His Ile Asn Pro Lys Glu Gly Trp 20 25 Gln Val Tyr Ser Ser Ala Gln Asp Pro Asp Gly Arg Gly Ile Cys Thr 35 40 Val Val Ala Pro Glu Gln Asn Leu Cys Ser Arg Asp Ala Lys Ser Arg 60 Gln Leu Arg Gln Leu Leu Glu Lys Val Gln Asn Met Ser Gln Ser Ile 70 75 Glu Val Leu Asn Leu Arg Thr Gln Arg Asp Phe Gln Tyr Val Leu Lys 90 Met Glu Thr Gln Met Lys Gly Leu Lys Ala Lys Phe Arg Gln Ile 105

<210> 1756 <211> 74 <212> PRT <213> Homo sapiens

<210> 1757 <211> 50 <212> PRT <213> Homo sapiens

<210> 1758 <211> 123 <212> PRT

49

<213> Homo sapiens

<400> 1758 Met Ala Trp Ile Pro Leu Phe Leu Gly Val Leu Ala Tyr Cys Thr Glu 5 10 Ser Val Ala Ser Tyr Glu Leu Phe Gln Pro Pro Ser Val Ser Val Ser 20 25 Pro Gly Gln Thr Ala Thr Phe Thr Cys Ser Gly Asp Asp Leu Gly Asn 40 Lys Tyr Ile Cys Trp Tyr Leu Gln Lys Pro Gly Gln Pro Pro Val Val 55 60 Leu Met Tyr Gln Asp Asn Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe 70 75 Ser Gly Ser Asn Ser Gly Ser Thr Ala Thr Leu Thr Ile Ser Gly Thr 85 90 Gln Ala Thr Asp Glu Ala Leu Tyr Phe Cys Gln Ala Trp Asp Thr Asn 100 105 Gly Ala Val Phe Gly Gly Gly Thr Gln Leu Thr 115 120

<210> 1759 <211> 75 <212> PRT <213> Homo sapiens

Pro Cys Leu Tyr Leu Glu Gly Asn Pro Thr 765 70 74

<210> 1760 <211> 122 <212> PRT <213> Homo sapiens

<400> 1760

 Met
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 Asp
 Val
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<210> 1761 <211> 123 <212> PRT <213> Homo sapiens

<400> 1761

Met Arg Val Arg Ile Gly Leu Thr Leu Leu Leu Cys Ala Val Leu Leu 5 10 Ser Leu Ala Ser Ala Ser Ser Asp Glu Glu Gly Ser Gln Asp Glu Ser 20 25 · . Leu Asp Ser Lys Thr Thr Leu Thr Ser Asp Glu Ser Val Lys Asp His 40 Thr Thr Ala Gly Arg Val Val Ala Gly Gln Ile Phe Leu Asp Ser Glu Glu Ser Glu Leu Glu Ser Ser Ile Gln Glu Glu Asp Ser Leu Lys . 70 75 Ser Gln Glu Gly Glu Ser Val Thr Glu Asp Ile Ser Phe Leu Glu Ser 85 90 Pro Asn Pro Glu Asn Lys Asp Tyr Glu Glu Pro Lys Lys Val Arg Lys 105 Pro Gly Ser Leu Asp Ile Phe Leu Ala Phe \*

<210> 1762 <211> 145

<212> PRT <213> Homo sapiens <221> misc\_feature <222> (1)...(145) <223> Xaa = any amino acid or nothing

<400> 1762 Met Ala Leu Ala Ala Leu Met Ile Ala Leu Gly Ser Leu Gly Leu His 10 Thr Trp Gln Ala Gln Ala Val Pro Thr Ile Leu Pro Leu Gly Leu Ala 25 Pro Asp Thr Phe Asp Asp Thr Tyr Val Gly Cys Ala Glu Glu Met Glu 35 40 Glu Lys Ala Ala Pro Leu Leu Lys Glu Met Ala His His Ala Leu 55 60 Leu Arg Glu Ser Trp Glu Ala Ala Gln Glu Thr Trp Glu Asp Lys Arg 70 75 Arg Gly Leu Thr Leu Pro Pro Gly Phe Lys Ala Gln Asn Gly Ile Ala 90 Ile Met Val Tyr Thr Asn Ser Ser Asn Thr Leu Tyr Trp Glu Leu Asn 100 105 Xaa Ala Val Arg Thr Gly Gly Gly Ser Arg Glu Leu Tyr Met Arg His 125 120 Phe Pro Phe Lys Ala Leu His Phe Tyr Leu Ile Arg Ala Leu Gln Leu 140 Leu 145

<210> 1763 <211> 257 <212> PRT <213> Homo sapiens

<400> 1763 Met Lys Arg Glu Arg Gly Ala Leu Ser Arg Ala Ser Arg Ala Leu Arg 10 Leu Ala Pro Phe Val Tyr Leu Leu Leu Ile Gln Thr Asp Pro Leu Glu 25 Gly Val Asn Ile Thr Ser Pro Val Arg Leu Ile His Gly Thr Val Gly 35 40 Lys Ser Ala Leu Leu Ser Val Gln Tyr Ser Ser Thr Ser Ser Asp Arg 55 60 Pro Val Val Lys Trp Gln Leu Lys Arg Asp Lys Pro Val Thr Val Val 75 70 Gln Ser Ile Gly Thr Glu Val Ile Gly Thr Leu Arg Pro Asp Tyr Arg 90 Asp Arg Ile Arg Leu Phe Glu Asn Gly Ser Leu Leu Leu Ser Asp Leu 105 Gln Leu Ala Asp Glu Gly Thr Tyr Glu Val Glu Ile Ser Ile Thr Asp 120 Asp Thr Phe Thr Gly Glu Lys Thr Ile Asn Leu Thr Val Asp Val Pro 135 140 Ile Ser Arg Pro Gln Val Leu Gly Ala Ser Thr Thr Val Leu Glu Leu 155

Ser Glu Ala Phe Thr Leu Asn Cys Ser His Glu Asn Gly Thr Lys Pro 170 Ser Tyr Thr Trp Leu Lys Asp Gly Lys Pro Leu Leu Asn Asp Ser Arg 185 Met Leu Leu Ser Pro Asp Gln Lys Val Leu Thr Ile Thr Arg Val Leu 200 205 Met Glu Asp Asp Leu Tyr Ser Cys Val Val Glu Asn Pro Ile Asn 215 220 Gln Gly Arg Thr Leu Pro Cys Lys Ile Thr Glu Tyr Arg Lys Ser Ser 230 235 Leu Ser Ser Ile Trp Leu Gln Glu Ala Phe Ser Ser Leu Gly Pro Trp 245 250

<210> 1764 <211> 166 <212> PRT <213> Homo sapiens <221> misc\_feature <222> (1)...(166) <223> Xaa = any amino acid or nothing

<400> 1764 Met Ala Leu Lys Val Leu Leu Glu Gln Glu Lys Thr Phe Phe Thr Leu 1 5 10 Leu Val Leu Leu Gly Tyr Leu Ser Cys Lys Val Thr Cys Glu Ser Gly 25 Asp Cys Arg Gln Gln Glu Phe Arg Asp Arg Ser Gly Asn Cys Val Pro 40 Cys Asn Gln Cys Gly Pro Gly Met Glu Leu Ser Lys Glu Cys Gly Phe 55 Gly Tyr Gly Glu Asp Ala Gln Cys Val Thr Cys Arg Leu His Arg Phe 75 Lys Glu Asp Trp Gly Phe Gln Lys Cys Lys Pro Cys Leu Asp Cys Ala Val Val Asn Arg Phe Gln Lys Ala Asn Cys Ser Ala Thr Ser Asp Ala 105 Ile Cys Gly Asp Cys Leu Pro Gly Phe Tyr Arg Lys Thr Lys Leu Val 115 120 125 Gly Phe Gln Asp Met Glu Trp Trp Xaa Ala Leu Val Gly Arg Thr Pro 135 140 Phe Leu Pro Ser Leu Tyr Gly Asn Pro Ala Leu Gly Cys Gln Pro Arg 150 155 Val Gln Thr Phe Gly Glu 165 166

<210> 1765 <211> 90 <212> PRT <213> Homo sapiens

<210> 1766 <211> 57 <212> PRT <213> Homo sapiens

<210> 1767 <211> 63 <212> PRT <213> Homo sapiens

<210> 1768 <211> 174 <212> PRT <213> Homo sapiens

<400> 1768

Met Pro Ser Gly Cys Arg Cys Leu His Leu Val Cys Leu Leu Cys Ile 10 Leu Gly Ala Pro Gly Gln Pro Val Arg Ala Asp Asp Cys Ser Ser His 25 Cys Asp Leu Ala His Gly Cys Cys Ala Pro Asp Gly Ser Cys Arg Cys 40 Asp Pro Gly Trp Glu Gly Leu His Cys Glu Arg Cys Val Arg Met Pro 55 60 Gly Cys Gln His Gly Thr Cys His Gln Pro Trp Gln Cys Ile Cys His 70 Ser Gly Trp Ala Gly Lys Phe Cys Asp Lys Asp Glu His Ile Cys Thr Thr Gln Ser Pro Cys Gln Asn Gly Gly Gln Cys Met Tyr Asp Gly Gly 105 Gly Glu Tyr His Cys Val Cys Leu Pro Gly Phe His Gly Arg Asp Cys 120 Glu Arg Lys Ala Gly Pro Cys Glu Gln Ala Gly Ser Pro Cys Arg Asn 135 140 Gly Gly Gln Cys Gln Asp Asp Gln Gly Phe Ala Leu Asn Phe Thr Cys 150 155 Arg Cys Leu Val Gly Phe Val Gly Ala Arg Cys Asp Val

<210> 1769 <211> 78 <212> PRT <213> Homo sapiens

<210> 1770 <211> 149 <212> PRT <213> Homo sapiens

<210> 1771 <211> 76 <212> PRT

<213> Homo sapiens

<210> 1772 <211> 128 <212> PRT <213> Homo sapiens

<400> 1772 Met Gly Ser Thr Lys His Trp Gly Glu Trp Leu Leu Asn Leu Lys Val Ala Pro Ala Gly Val Phe Gly Val Ala Phe Leu Ala Arg Val Ala Leu 20 25 Val Phe Tyr Gly Val Phe Gln Asp Arg Thr Leu His Val Arg Tyr Thr 35 40 Asp Ile Asp Tyr Gln Val Phe Thr Asp Ala Ala Arg Phe Val Thr Glu 60 55 Gly Arg Ser Pro Tyr Leu Arg Ala Thr Tyr Arg Tyr Thr Pro Leu Leu 75 Gly Trp Leu Leu Thr Pro Asn Ile Tyr Leu Ser Glu Leu Phe Gly Lys 90 Phe Leu Phe Ile Ser Cys Asp Leu Leu Thr Ala Phe Leu Leu Tyr Arg 105 Leu Leu Leu Lys Gly Leu Gly Arg Arg Gln Ala Cys Gly Tyr Cys 120

<210> 1773 <211> 614 <212> PRT <213> Homo sapiens

<400> 1773 Met Gly Ala Leu Arg Pro Thr Leu Leu Pro Pro Ser Leu Pro Leu Leu 10 Leu Leu Met Leu Gly Met Gly Cys Trp Ala Arg Glu Val Leu Val 20 Pro Glu Gly Pro Leu Tyr Arg Val Ala Gly Thr Ala Val Ser Ile Ser 40 Cys Asn Val Thr Gly Tyr Glu Gly Pro Ala Gln Gln Asn Phe Glu Trp Phe Leu Tyr Arg Pro Glu Ala Pro Asp Thr Ala Leu Gly Ile Val Ser 70 75 Thr Lys Asp Thr Gln Phe Ser Tyr Ala Val Phe Lys Ser Arg Val Val 85 90 Ala Gly Glu Val Gln Val Gln Arg Leu Gln Gly Asp Ala Val Val Leu 105 Lys Ile Ala Arg Leu Gln Ala Gln Asp Ala Gly Ile Tyr Glu Cys His 120 Thr Pro Ser Thr Asp Thr Arg Tyr Leu Gly Ser Tyr Ser Gly Lys Val 135 140 Glu Leu Arg Val Leu Pro Asp Val Leu Gln Val Ser Ala Ala Pro Pro 150 155 Gly Pro Arg Gly Arg Gln Ala Pro Thr Ser Pro Pro Arg Met Thr Val 165 170 His Glu Gly Gln Glu Leu Ala Leu Gly Cys Leu Ala Arg Thr Ser Thr 185 Gln Lys His Thr His Leu Ala Val Ser Phe Gly Arg Ser Val Pro Glu 200 Ala Pro Val Gly Arg Ser Thr Leu Gln Glu Val Val Gly Ile Arg Ser 215 . 220 Asp Leu Ala Val Glu Ala Gly Ala Pro Tyr Ala Glu Arg Leu Ala Ala 230 235 Gly Glu Leu Arg Leu Gly Lys Glu Gly Thr Asp Arg Tyr Arg Met Val 250 245 Val Gly Gly Ala Gln Ala Gly Asp Ala Gly Thr Tyr His Cys Thr Ala 265 Ala Glu Trp Ile Gln Asp Pro Asp Gly Ser Trp Ala Gln Ile Ala Glu 280 Lys Arg Ala Val Leu Ala His Val Asp Val Gln Thr Leu Ser Ser Gln 295 300 Leu Ala Val Thr Val Gly Pro Gly Glu Arg Arg Ile Gly Pro Gly Glu 310 315 Pro Leu Glu Leu Leu Cys Asn Val Ser Gly Ala Leu Pro Pro Ala Gly 330 Arg His Ala Ala Tyr Ser Val Gly Trp Glu Met Ala Pro Ala Gly Ala 345 Pro Gly Pro Gly Arg Leu Val Ala Gln Leu Asp Thr Glu Gly Val Gly 360 Ser Leu Gly Pro Gly Tyr Glu Gly Arg His Ile Ala Met Glu Lys Val

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375
Ala Ser Arg Thr Tyr Arg Leu Arg Leu Glu Ala Ala Arg Pro Gly Asp
        390
                      395
Ala Gly Thr Tyr Arg Cys Leu Ala Lys Ala Tyr Val Arg Gly Ser Gly
             405
                               410
Thr Arg Leu Arg Glu Ala Ala Ser Ala Arg Ser Arg Pro Leu Pro Val
                          425
His Val Arg Glu Glu Gly Val Val Leu Glu Ala Val Ala Trp Leu Ala
                       440
                                  445
Gly Gly Thr Val Tyr Arg Gly Glu Thr Ala Ser Leu Leu Cys Asn Ile
                    455
Ser Val Arg Gly Gly Pro Pro Gly Leu Arg Leu Ala Ala Ser Trp Trp
                 470
                                  475
Val Glu Arg Pro Glu Asp Gly Glu Leu Ser Ser Val Pro Ala Gln Leu
             485
                             490
Val Gly Gly Val Gly Gln Asp Gly Val Ala Glu Leu Gly Val Arg Pro
          500
                           505
Gly Gly Gly Pro Val Ser Val Glu Leu Val Gly Pro Arg Ser His Arg
                       520
                                         525
Leu Arg Leu His Ser Leu Gly Pro Glu Asp Glu Gly Val Tyr His Cys
           535
                                   540
Ala Pro Ser Ala Trp Val Gln His Ala Asp Tyr Ser Trp Tyr Gln Ala
545 550 555
Gly Ser Ala Arg Ser Gly Pro Val Thr Val Tyr Pro Tyr Met His Ala
             565 . 570 575
Leu Asp Thr Leu Phe Val Pro Leu Leu Val Gly Thr Gly Val Ala Leu
                         585
Val Thr Gly Ala Thr Val Leu Gly Thr Ile Thr Cys Cys Phe Met Lys
      595
                       600
                                          605
Arg Leu Arg Lys Arg
          613
   610
```

<210> 1774 <211> 156 <212> PRT <213> Homo sapiens

<400> 1774 Met Glu Ala Leu Thr Leu Trp Leu Leu Pro Trp Ile Cys Gln Cys Val 10 Ser Val Arg Ala Asp Ser Ile Ile His Ile Gly Ala Ile Phe Glu Glu 20 25 Asn Ala Ala Lys Asp Asp Arg Val Phe Gln Leu Ala Val Ser Asp Leu 40 Ser Leu Asn Asp Asp Ile Leu Gln Ser Glu Lys Ile Thr Tyr Ser Ile 55 Lys Val Ile Glu Ala Asn Asn Pro Phe Gln Ala Val Gln Glu Ala Cys 70 75 Asp Leu Met Thr Gln Gly Ile Leu Ala Leu Val Thr Ser Thr Gly Cys 90 Ala Ser Ala Asn Ala Leu Gln Ser Leu Thr Asp Ala Met His Ile Pro 105 His Leu Phe Val Gln Arg Asn Pro Gly Gly Ser Pro Arg Thr Ala Cys 125 120 His Leu Asn Pro Ser Pro Asp Gly Glu Ala Tyr Thr Leu Ala Ser Arg 135

Pro Pro Val Arg Leu Asn Asp Val Met Leu Arg Leu 145 150 150 155

<210> 1775 <211> 896 <212> PRT <213> Homo sapiens

<400> 1775 Met Gln Lys Ala Ser Val Leu Leu Phe Leu Ala Trp Val Cys Phe Leu 10 Phe Tyr Ala Gly Ile Ala Leu Phe Thr Ser Gly Phe Leu Leu Thr Arg 20 25 Leu Glu Leu Thr Asn His Ser Ser Cys Gln Glu Pro Pro Gly Pro Gly 40 Ser Leu Pro Trp Gly Ser Gln Gly Lys Pro Gly Ala Cys Trp Met Ala Ser Arg Phe Ser Arg Val Val Leu Val Leu Ile Asp Ala Leu Arg Phe 70 Asp Phe Ala Gln Pro Gln His Ser His Val Pro Arg Glu Pro Pro Val 85 -90 Ser Leu Pro Phe Leu Gly Lys Leu Ser Ser Leu Gln Arg Ile Leu Glu 105 Ile Gln Pro His His Ala Arg Leu Tyr Arg Ser Gln Val Asp Pro Pro 120 Thr Thr Thr Met Gln Arg Leu Lys Ala Leu Thr Thr Gly Ser Leu Pro 140 135 Thr Phe Ile Asp Ala Gly Ser Asn Phe Ala Ser His Ala Ile Val Glu 155 150 Asp Asn Leu Ile Lys Gln Leu Thr Ser Ala Gly Arg Arg Val Val Phe 165 170 Met Gly Asp Asp Thr Trp Lys Asp Leu Phe Pro Gly Ala Phe Ser Lys 185 Ala Phe Phe Pro Ser Phe Asn Val Arg Asp Leu Asp Thr Val Asp 200 Asn Gly Ile Leu Glu His Leu Tyr Pro Thr Met Asp Ser Gly Glu Trp 215 220 Asp Val Leu Ile Ala His Phe Leu Gly Val Asp His Cys Gly His Lys 230 235 His Gly Pro His His Pro Glu Met Ala Lys Lys Leu Ser Gln Met Asp 245 250 Gln Val Ile Gln Gly Leu Val Glu Arg Leu Glu Asn Asp Thr Leu Leu 260 265 270 Val Val Ala Gly Asp His Gly Met Thr Thr Asn Gly Asp His Gly Gly 280 285 Asp Ser Glu Leu Glu Val Ser Ala Ala Leu Phe Leu Tyr Ser Pro Thr 295 300 Ala Val Phe Pro Ser Thr Pro Pro Glu Glu Pro Glu Val Ile Pro Gln 310 315 Val Ser Leu Val Pro Thr Leu Ala Leu Leu Leu Gly Leu Pro Ile Pro 325 330 Phe Gly Asn Ile Gly Glu Val Met Ala Glu Leu Phe Ser Gly Gly Glu 345 350 Asp Ser Gln Pro His Ser Ser Ala Leu Ala Gln Ala Ser Ala Leu His 360 365 Leu Asn Ala Gln Gln Val Ser Arg Phe Phe His Thr Tyr Ser Ala Ala

	370					375					380		,		
Thr		Asp	Leu	Gln	Ala		Glu	Leu	His	Gln		Gln	Asn	Leu	Phe
385					390	_				395					400
Ser	Lys	Ala	Ser	Ala 405	Asp	Tyr	Gln	Trp	Leu 410	Leu	Gln	Ser	Pro	Lys 415	Gly
Ala	Glu	Ala	Thr 420	Leu	Pro	Thr	Val	Ile 425	Ala	Glu	Leu	Gln	Gln 430	Phe	Leu
Arg	Gly	Ala 435	Arg	Ala	Met	Суѕ	Ile 440	Glu	Ser	Trp	Ala	Arg 445	Phe	Ser	Leu
Val	Arg 450	Met	Ala	Gly	Gly	Thr 455	Ala	Leu	Leu	Ala	Ala 460	Ser	Cys	Phe	Ile
Cys 465	Leu	Leu	Ala	Ser	Gln 470	Trp	Ala	Ile	Ser	Pro 475	Gly	Phe	Pro	Phe	Cys 480
Pro	Leu	Leu	Leu	Thr 485	Pro	Val	Ala	Trp	Gly 490	Lėu	Val	Gly	Ala	Ile 495	Ala
Tyr	Ala	Gly	Leu 500	Leu	Gly	Thr	Ile	Glu 505	Leu	Lys	Leu	Asp	Leu 510	Val	Leu
Leu	Gly	Ala 515	Val	Ala	Ala	Val	Ser 520	Ser	Phe	Leu	Pro	Phe 525	Leu	Trp	Lys
Ala	Trp 530	Ala	Gly	Trp	Gly	Ser 535	Lys	Arg	Pro	Leu	Ala 540	Thr	Leu	Phe	Pro
Ile 545	Pro	Gly	Pro	Val	Leu 550	Leu	Leu	Leu	Leu	Phe 555	Arg	Leu	Ala	Val	Phe 560
Phe	Ser	Asp	Ser	Phe 565	Val	Val	Ala	Glu	Ala 570	Arg	Ala	Thr	Pro	Phe 575	Leu
Leu	Gly	Ser	Phe 580	Ile	Leu	Leu	Leu	Val 585	Val	Gln	Leu	His	Trp 590	Glu	Gly
Gln	Leu	Leu 595	Pro	Pro	Lys	Leu	Leu 600	Thr	Met	Pro	Arg	Leu 605	Gly	Thr	Ser
Ala	Thr 610	Thr	Asn	Pro	Pro	Arg 615	His	Asn	Gly	Ala	Tyr 620	Ala	Leu	Arg	Leu
Gly 625	Ile	Gly	Leu	Leu	Leu 630	Cys	Thr	Arg	Leu	Ala 635	Gly	Leu	Phe	His	Arg 640
Суѕ	Pro	Glu	Glu	Thr 645	Pro	Val	Cys	His	Ser 650	Ser	Pro	Trp	Leu	Ser 655	Pro
Leu	Ala	Ser	Met 660	Val	Gly	Gly	Arg	Ala 665	Lys	Asn	Leu	Trp	Tyr 670	Gly	Ala
-		675					680					685		Trp	
	690	-	-			695					700			Phe	
705					710					715				Trp	720
			_	725	_				730	_		_		Leu 735	
	-		740					745				-	750	Ala	
	-	755					760	•				765		Val	-
	770					775					780			Phe	
Gly 785	Pro	Pro	Thr	Ser	Gln 790	Ala	Asp	Leu	Asp	Tyr 795	Val	Val	Pro	Gln	Ile 800
	Arg	His	Met	Gln 805		Glu	Phe	Arg	Gly 810		Leu	Glu	Arg	Thr 815	
Ser	Gln	Gly	Pro 820		Thr	Val	Ala	Ala 825		Gln	Leu	Gly	Ser 830	Val	Tyr
Ser	Ala	Ala 835		Val	Thr	Ala	Leu 840		Leu	Leu	Ala	Phe 845		Leu	Leu

<210> 1776 <211> 178 <212> PRT <213> Homo sapiens

<400> 1776 Met Trp Ala Cys Trp Cys Val Leu Gly Thr Pro Gly Val Ala Met Val 10 Leu Leu His Thr Thr Ile Ser Phe Cys Val Ala Gln Phe Arg Ser Gln 25 Leu Leu Thr Trp Leu Cys Ser Leu Leu Leu Leu Ser Thr Leu Arg Leu 40 Gln Gly Val Glu Glu Val Lys Arg Arg Trp Tyr Lys Thr Glu Asn Glu 55 60 Tyr Tyr Leu Leu Gln Phe Thr Leu Thr Val Arg Cys Leu Tyr Tyr Thr 70 75 Ser Phe Ser Leu Glu Leu Cys Trp Gln Gln Leu Pro Ala Ala Ser Thr 90 Ser Tyr Ser Phe Pro Trp Met Leu Ala Tyr Val Phe Tyr Tyr Pro Val 100 105 110 Leu His Asn Gly Pro Ile Leu Ser Phe Ser Glu Phe Ile Lys Gln Arg 125 120 Ser Gln Trp Ser Asn Arg Glu Phe Gly Met Glu Val Glu Ser Lys Gly 135 140 Pro Gly Ala His Pro Pro Gly Phe Glu Ser Leu Leu Cys Phe Gly Leu 145 150 155 Arg Val Leu Ala Glu Leu Leu Thr Leu Leu Met Pro Gln Ser Ser Tyr 170 Gln \* 177

<210> 1777 <211> 59 <212> PRT <213> Homo sapiens

50 55 59

<210> 1778 <211> 137 <212> PRT <213> Homo sapiens

<400> 1778 Met Val Ala Pro Gly Leu Val Leu Gly Leu Val Leu Pro Leu Ile Leu Trp Ala Asp Arg Ser Ala Gly Ile Gly Phe Arg Phe Ala Ser Tyr Ile 20 25 Asn Asn Asp Met Val Leu Gln Lys Glu Pro Ala Gly Ala Val Ile Trp 40 Gly Phe Gly Thr Pro Gly Ala Thr Val Thr Val Thr Leu Arg Gln Gly 55 60 Gln Glu Thr Ile Met Lys Lys Val Thr Ser Val Lys Ala His Ser Asp 70 75 Thr Trp Met Val Val Leu Asp Pro Met Lys Pro Gly Gly Pro Phe Glu 85 90 Val Met Ala Gln Gln Thr Leu Glu Lys Ile Asn Phe Thr Leu Arg Val 105 110 His Asp Val Leu Phe Gly Asp Val Trp Leu Cys Ser Gly Gln Ser Asn 115 120 Met Gln Met Thr Val Leu Gln Ile Phe 130 135 137

<210> 1779 <211> 65 <212> PRT <213> Homo sapiens

<210> 1780 <211> 53 <212> PRT <213> Homo sapiens

<400> 1780

<210> 1781 <211> 109 <212> PRT <213>`Homo sapiens

<400> 1781 Met Met His Asn Ile Ile Val Lys Glu Leu Ile Val Thr Phe Phe Leu 10 Gly Ile Thr Val Val Gln Met Leu Ile Ser Val Thr Gly Leu Lys Gly Val Glu Ala Gln Asn Gly Ser Glu Ser Glu Val Phe Val Gly Lys Tyr 35 40 Glu Thr Leu Val Phe Tyr Trp Pro Ser Leu Leu Cys Leu Ala Phe Leu 55 60 Leu Gly Arg Phe Leu His Met Phe Val Lys Ala Leu Arg Val His Leu 70 75 Gly Trp Glu Leu Gln Val Glu Glu Lys Ser Val Leu Glu Val His Gln 90 Gly Glu His Val Lys Gln Leu Leu Arg Ile Pro Arg Pro 100 105 109

<210> 1782 <211> 58 <212> PRT <213> Homo sapiens

<210> 1783 <211> 102 <212> PRT <213> Homo sapiens

PCT/US01/02687 WO 01/54477

Met Leu Ile Pro His Gln Leu Pro Leu Cys Ser Pro Trp Leu Val Gln 10 Ala Met Leu Thr Ile Glu Val Pro Trp Leu Leu Gly Leu Ala His Tyr 20 25 Arg Leu Gly Trp His Ala Leu Glu Gly Ile Phe Trp Trp Gly Ala Ser 40 Val Phe His Ala Leu Gln Ala Met Leu Val Arg Lys Trp Pro Leu Gly 55 Leu Val Glu Phe Thr Gly Thr Cys Gly Ile Leu Val Glu Val Ile Gly Leu Trp Trp Gly Glu Gly Ser Thr Gly Asn Arg Trp Met Gly Leu Asn 90 Ser Thr Gly Gly Gln \* 100 101

<210> 1784 <211> 243 <212> PRT <213> Homo sapiens

<400> 1784

Met Gly Glu Ala Ser Pro Pro Ala Pro Ala Arg Arg His Leu Leu Val 10 Leu Leu Leu Leu Ser Thr Leu Val Ile Pro Ser Ala Ala Ala Pro 20 25 Ile His Asp Ala Asp Ala Gln Glu Ser Ser Leu Gly Leu Thr Gly Leu 40 Gln Ser Leu Leu Gln Gly Phe Ser Arg Leu Phe Leu Lys Gly Asn Leu 55 Leu Arg Gly Ile Asp Ser Leu Phe Ser Ala Pro Met Asp Phe Arg Gly 70 75 Leu Pro Gly Asn Tyr His Lys Glu Glu Asn Gln Glu His Gln Leu Gly 90 85 Asn Asn Thr Leu Ser Ser His Leu Gln Ile Asp Lys Met Thr Asp Asn 100 105 Lys Thr Gly Glu Val Leu Ile Ser Glu Asn Val Val Ala Ser Ile Gln 115 120 Pro Ala Glu Gly Ser Phe Glu Gly Asp Leu Lys Val Pro Arg Met Glu 135 140 Glu Lys Glu Ala Leu Val Pro Ile Gln Lys Ala Thr Asp Ser Phe His 150 155 Thr Glu Leu His Pro Arg Val Ala Phe Trp Ile Ile Lys Leu Pro Arg 165 170 Arg Arg Ser His Gln Asp Ala Leu Glu Gly Gly His Trp Leu Ser Glu 185 Lys Arg His Arg Leu Gln Ala Ile Arg Asp Gly Leu Arg Lys Gly Thr 200 His Lys Asp Val Leu Glu Glu Gly Thr Glu Ser Ser His Ser Arg 215 220 Leu Ser Pro Arg Lys Thr His Leu Leu Tyr Ile Leu Arg Pro Ser Arg 230 235

Gln Leu \* 242

<210> 1785 <211> 158 <212> PRT <213> Homo sapiens

<400> 1785 Met Lys Ala Leu Leu Leu Val Leu Pro Trp Leu Ser Pro Ala Asn 10 Tyr Ile Asp Asn Val Gly Asn Leu His Phe Leu Tyr Ser Glu Leu Cys 25 Lys Gly Ala Ser His Tyr Gly Leu Thr Lys Asp Arg Lys Arg Arg Ser Gln Asp Gly Cys Pro Asp Gly Cys Ala Ser Leu Thr Ala Thr Ala Pro Ser Pro Glu Val Ser Ala Ala Thr Ile Ser Leu Met Thr Asp Glu 70 Pro Gly Leu Asp Asn Pro Ala Tyr Val Ser Ser Ala Glu Asp Gly Gln 90 Pro Ala Ile Ser Pro Val Asp Ser Gly Arg Ser Asn Arg Thr Arg Ala 105 Arg Pro Phe Glu Arg Ser Thr Ile Ile Ser Arg Ser Phe Lys Lys Ile 120 Asn Arg Ala Leu Ser Val Leu Arg Arg Thr Lys Ser Gly Ser Ala Val 135 140 Ala Asn His Ala Asp Gln Gly Arg Glu Asn Ser Glu Asn Thr 150

<210> 1786 <211> 142 <212> PRT <213> Homo sapiens

<400> 1786 Met Glu Ser Ala Val Arg Val Glu Ser Gly Val Leu Val Gly Val Val 10 Cys Leu Leu Ala Cys Pro Ala Thr Ala Thr Gly Pro Glu Val Ala Gln Pro Glu Val Asp Thr Thr Leu Gly Arg Val Arg Gly Arg Gln Val Gly Val Lys Gly Thr Asp Arg Leu Val Asn Val Phe Leu Gly Ile Pro 55 Phe Ala Gln Pro Pro Leu Gly Pro Asp Arg Phe Ser Ala Pro His Pro 70 75 Ala Gln Pro Trp Glu Gly Val Arg Asp Ala Ser Thr Ala Pro Pro Met 90 Cys Leu Gln Asp Val Glu Ser Met Asn Ser Ser Arg Phe Val Leu Asn 100 105 Gly Lys Gln Gln Ile Phe Ser Val Ser Glu Asp Cys Leu Val Leu Asn 120 Val Tyr Ser Pro Ala Glu Val Pro Ala Gly Ser Gly Arg Pro 130 135 140

<210> 1787
<211> 120
<212> PRT
<213> Homo sapiens

<221> misc\_feature
<222> (1)...(120)
<223> Xaa = any amino acid or nothing

<400> 1787 Met Ala Leu Thr Gly Tyr Ser Trp Leu Leu Leu Ser Ala Thr Phe Leu 10 Asn Val Gly Ala Glu Ile Ser Ile Thr Leu Glu Pro Ala Gln Pro Ser 20 25 Glu Gly Asp Asn Val Thr Leu Val Val His Gly Leu Ser Gly Glu Leu 40 Leu Ala Tyr Ser Trp Tyr Ala Gly Pro Thr Leu Ser Val Ser Tyr Leu 55 Val Ala Ser Tyr Ile Val Ser Thr Gly Asp Glu Thr Pro Gly Pro Ala 70 75 His Thr Xaa Arg Glu Ala Val Arg Pro Asp Gly Ser Leu Asp Ile Gln 90 85 Gly Ile Leu Pro Arg His Ser Ser Thr Tyr Ile Leu Gln Thr Phe Asn 100 105 Arg Gln Leu Gln Thr Glu Val Gly

<210> 1788 <211> 68 <212> PRT <213> Homo sapiens

<210> 1789 <211> 133 <212> PRT <213> Homo sapiens

<400> 1789
Met Ala Val Val Ile Arg Leu Leu Gly Leu Pro Phe Ile Ala Gly Pro
1 5 10 15

Val Asp Ile Arg His Phe Phe Thr Gly Leu Thr Ile Pro Asp Gly Gly 25 Val His Ile Ile Gly Glu Ile Gly Glu Ala Phe Ile Ile Phe Ala 40 Thr Asp Glu Asp Ala Arg Arg Ala Ile Ser Arg Ser Gly Gly Phe Ile 55 60 Lys Asp Ser Ser Val Glu Leu Phe Leu Ser Ser Lys Ala Glu Met Gln 70 75 Lys Thr Ile Glu Met Lys Arg Thr Asp Arg Val Gly Arg Gly Arg Pro 85 90 Gly Ser Gly Thr Ser Gly Val Asp Ser Leu Ser Asn Phe Ile Glu Ser 100 105 110 Val Lys Glu Glu Ala Ser Asn Ser Gly Tyr Gly Ser Ser Ile Asn Gln 115 120 Asp Ala Gly Phe His 130

<210> 1790 <211> 82 <212> PRT <213> Homo sapiens

<210> 1791 <211> 50 <212> PRT <213> Homo sapiens

<210> 1792 <211> 166 <212> PRT <213> Homo sapiens <221> misc\_feature <222> (1) ... (166) <223> Xaa = any amino acid or nothing

<400> 1792

Met Leu Leu Trp Leu Leu Leu Ile Leu Thr Pro Gly Arg Glu Gln 10 Ser Gly Val Ala Pro Lys Ala Val Leu Leu Leu Asp Pro Pro Trp Ser 20 25 Thr Ala Phe Lys Gly Glu Lys Val Ala Leu Ile Cys Ser Ser Ile Ser 40 His Ser Leu Ala Gln Gly Asp Thr Tyr Trp Tyr His Asp Glu Lys Leu 55 Leu Lys Ile Lys His Asp Lys Ile Gln Ile Thr Glu Pro Gly Asn Tyr 70 75 Gln Cys Lys Thr Arg Gly Ser Ser Leu Ser Asp Ala Val His Val Glu 85 90 Phe Ser Pro Asp Trp Leu Ile Leu Gln Ala Leu His Pro Val Phe Glu 105 110 Gly Asp Asn Val Ile Leu Arg Cys Gln Gly Lys Asp Asn Lys Asn Thr 120 125 His His Lys Val Tyr Tyr Lys Asp Gly Lys Gln Xaa Ser Asn Ser Tyr 135 140 Asn Leu Glu Lys Asn Thr Val Asp Ser Val Ser Arg Asp Asn Ser Pro Tyr Tyr Cys Ala Gly \* 165

<210> 1793 <211> 146 <212> PRT <213> Homo sapiens

<400> 1793 Met Ala Thr Ala Ala Gln Gly Pro Leu Ser Leu Leu Trp Gly Trp Leu 10 Trp Ser Glu Arg Phe Trp Leu Pro Glu Asn Val Ser Trp Ala Asp Leu Glu Gly Pro Ala Asp Gly Tyr Gly Tyr Pro Arg Gly Arg His Ile Leu 40 Ser Val Phe Pro Leu Ala Ala Gly Ile Phe Phe Val Arg Leu Leu Phe 55 60 Glu Arg Phe Ile Ala Lys Pro Cys Ala Leu Arg Ile Gly Ile Glu Asp 70 75 Ser Gly Pro Tyr Gln Ala Gln Pro Asn Ala Ile Leu Glu Lys Val Phe 90 Ile Ser Ile Thr Lys Tyr Pro Asp Lys Lys Arg Leu Glu Gly Leu Ser 105 Lys Gln Leu Asp Trp Asn Val Arg Lys Ile Gln Cys Trp Phe Arg His 120

Arg Arg Asn Gln Asp Lys Pro Pro Thr Leu Thr Lys Phe Cys Glu Ser 130 135 140

Met \*

<210> 1794 <211> 151 <212> PRT <213> Homo sapiens

<400> 1794 Met Glu Arg Arg Leu Leu Gly Gly Met Ala Leu Leu Leu Gln 10 Ala Leu Pro Ser Pro Leu Ser Ala Arg Ala Glu Pro Pro Gln Asp Lys 25 Glu Ala Cys Val Gly Thr Asn Asn Gln Ser Tyr Ile Cys Asp Thr Gly 40 His Cys Cys Gly Gln Ser Gln Cys Cys Asn Tyr Tyr Tyr Glu Leu Trp Trp Phe Trp Leu Val Trp Thr Ile Ile Ile Ile Leu Ser Cys Cys 65 70 Val Cys His His Arg Arg Ala Lys His Arg Leu Gln Ala Gln Gln Arg 85 90 Gln His Glu Ile Asn Leu Ile Ala Tyr Arg Glu Ala His Asn Tyr Ser 105 Ala Leu Pro Phe Tyr Phe Arg Phe Leu Pro Asn Tyr Leu Leu Pro Pro 120 125 Tyr Glu Glu Val Val Asn Arg Pro Pro Thr Pro Pro Pro Pro Tyr Ser 135 140 Ala Phe Gln Leu Gln Gln Gln 150 151

<210> 1795 <211> 177 <212> PRT <213> Homo sapiens

<400> 1795

Met Ala Ala Leu Ala Ala Ala Lys Lys Val Trp Ser Ala Arg Arg Leu Leu Val Leu Leu Phe Thr Pro Leu Ala Leu Leu Pro Val Val Phe 20 25 Ala Leu Pro Pro Lys Glu Gly Arg Cys Leu Phe Val Ile Leu Leu Met 40 Ala Val Tyr Trp Cys Thr Glu Ala Leu Pro Leu Ser Val Thr Ala Leu 55 60 Leu Pro Ile Val Leu Phe Pro Phe Met Gly Ile Leu Pro Ser Asn Lys 70 75 Val Cys Pro Gln Tyr Phe Leu Asp Thr Asn Phe Leu Phe Leu Ser Gly 85 90 Leu Ile Met Ala Ser Ala Ile Glu Glu Trp Asn Leu His Arg Arg Ile 105 Ala Leu Lys Ile Leu Met Leu Val Gly Val Gln Pro Ala Arg Leu Ile

<210> 1796 <211> 98 <212> PRT <213> Homo sapiens <221> misc\_feature <222> (1)...(98) <223> Xaa = any amino acid or nothing

<400> 1796 Met His Pro Leu Pro Gly Tyr Trp Ser Cys Tyr Cys Leu Leu Leu 5 10 Phe Ser Leu Gly Val Gln Gly Ser Leu Gly Ala Pro Ser Ala Ala Pro 20 25 Glu Gln Val His Leu Ser Tyr Pro Gly Glu Pro Gly Ser Met Thr Val 35 40 Thr Trp Thr Trp Val Pro Thr Arg Ser Glu Val Gln Phe Gly Leu 55 60 Gln Pro Ser Gly Pro Leu Pro Leu Arg Ala Gln Gly Thr Phe Val Pro 70 75 Phe Val Asp Xaa Gly Ile Leu Arg Arg Lys Leu Tyr Ile His Arg Val 85 . 90 Thr Leu

<210> 1797 <211> 96 <212> PRT <213> Homo sapiens

98

<210> 1798 <211> 91 <212> PRT <213> Homo sapiens

<400> 1798

 Met
 Arg
 Pro
 Ala
 Leu
 Ala
 Val
 Gly
 Leu
 Val
 Phe
 Ala
 Gly
 Cys
 Ser

 Asn
 Val
 Ile
 Phe
 Leu
 Glu
 Leu
 Ala
 Arg
 Lys
 His
 Pro
 Gly
 Cys
 Gly

 Asn
 Ile
 Val
 Thr
 Phe
 Ala
 Gln
 Phe
 Leu
 Phe
 Ile
 Ala
 Val
 Gly
 Phe

 Leu
 Phe
 Glu
 Ala
 Asp
 Leu
 Gly
 Arg
 Lys
 Pro
 Pro
 Ala
 Ile
 Pro
 Ile
 Arg

 Leu
 Phe
 Glu
 Ala
 Asp
 Leu
 Gly
 Arg
 Lys
 Pro
 Pro
 Ala
 Ile
 Pro
 Ile
 Arg

 Tyr
 Tyr
 Ala
 Ile
 Met
 Val
 Thr
 Met
 Pro
 Thr
 Val
 Arg

 Asn
 Tyr
 Ala
 Leu
 Asn
 Leu
 Asn
 Ile
 Ala
 Met
 Pro

<210> 1799 <211> 77 <212> PRT <213> Homo sapiens

<210> 1800 <211> 182 <212> PRT <213> Homo sapiens

40 Tyr Phe Asn Ile Phe Ser Arg Ile Leu Gly Gly Ser Gln Val Glu Lys 55 Gly Ser Tyr Pro Trp Gln Val Ser Leu Lys Gln Arg Gln Lys His Ile 75 70 Cys Gly Gly Ser Ile Val Ser Pro Gln Trp Val Ile Thr Ala Ala His 85 90 Cys Ile Ala Asn Arg Asn Ile Val Ser Thr Leu Asn Val Thr Ala Gly 100 105 Glu Tyr Asp Leu Ser Gln Thr Asp Pro Gly Glu Gln Thr Leu Thr Ile 120 Glu Thr Val Ile Ile His Pro His Phe Ser Thr Lys Lys Pro Met Asp 135 Tyr Asp Ile Ala Leu Leu Lys Met Ala Gly Ala Phe Gln Phe Gly His 150 155 Phe Val Gly Pro Ile Cys Leu Pro Glu Leu Arg Glu Gln Phe Glu Ala 165 170 Gly Phe Ile Cys Thr Thr 180 182

<210> 1801 <211> 202 <212> PRT

<213> Homo sapiens

## <400> 1801

Met Thr Glu Ala Thr Phe Asp Thr Leu Arg Leu Trp Leu Ile Ile Leu 10 Leu Cys Ala Leu Arg Leu Ala Met Met Arg Ser His Leu Gln Ala Tyr 20 25 Leu Asn Leu Ala Gln Lys Cys Val Asp Gln Met Lys Lys Glu Ala Gly 40 Arg Ile Ser Thr Val Glu Leu Gln Lys Met Val Ala Arg Val Phe Tyr 55 60 Tyr Leu Cys Val Ile Ala Leu Gln Tyr Val Ala Pro Leu Val Met Leu 70 75 Leu His Thr Thr Leu Leu Lys Thr Leu Gly Asn His Ser Trp Gly Ile Tyr Pro Glu Ser Ile Ser Thr Leu Pro Val Asp Asn Ser Leu Leu 105 Ser Asn Ser Val Tyr Ser Glu Leu Pro Ser Ala Glu Gly Lys Met Lys 120 125 His Asn Ala Arg Gln Gly Pro Ala Val Pro Pro Gly Met Gln Ala Tyr 135 140 Gly Ala Ala Pro Phe Glu Asp Leu Gln Leu Asp Phe Thr Glu Met Pro 150 155 Lys Cys Gly Asp Leu Ile Pro Arg Phe Gly Leu Pro Leu Arg Ile Gly 170 Ser Asp Asn Gly Leu Ala Phe Val Ala Asp Leu Val Gln Lys Thr Ala 185 Lys Trp Lys Gly Pro Gln Ile Val Val Leu 200

<210> 1802

<211> 172 <212> PRT <213> Homo sapiens

<400> 1802 Met Asn Asn Phe Arg Ala Thr Ile Leu Phe Trp Ala Ala Ala Trp 10 Ala Lys Ser Gly Lys Pro Ser Gly Glu Met Asp Glu Val Gly Val Gln 25 Lys Cys Lys Asn Ala Leu Lys Leu Pro Val Leu Glu Val Leu Pro Gly 40 Gly Gly Trp Asp Asn Leu Arg Asn Val Asp Met Gly Arg Val Met Glu Leu Thr Tyr Ser Asn Cys Arg Thr Thr Glu Asp Gly Gln Tyr Ile Ile Pro Asp Glu Ile Phe Thr Ile Pro Gln Lys Gln Ser Asn Leu Glu Met 85 90 Asn Ser Glu Ile Leu Glu Ser Trp Ala Asn Tyr Gln Ser Ser Thr Ser 105 Tyr Ser Ile Asn Thr Glu Leu Ser Leu Phe Ser Lys Val Asn Gly Lys 120 Phe Ser Thr Glu Phe Gln Arg Met Lys Thr Leu Gln Val Lys Asp Gln 135 140 Ala Ile Thr Thr Arg Val Gln Val Arg Asn Leu Val Tyr Thr Val Lys 150 155 Ile Asn Pro Thr Leu Glu Leu Ser Ser Gly Phe Arg 170

<210> 1803 <211> 158 <212> PRT <213> Homo sapiens

<400> 1803 Met Ser Leu Arg Leu Gly Pro Ala Trp Arg His Leu Thr Cys Leu Gly 5 10 Thr Lys His Ser Lys Ala Asn Ser Val Leu Ala Ser Gln His Ala Gly 20 25 Phe Phe Val Ala Gln Gly Arg Trp Ala Ile His Arg Ala Phe Ser Ser 40 Arg Thr Ser Pro Thr Pro Pro Arg Gly Pro Leu Leu Pro Gly Arg His Pro Leu Leu Ser Arg Arg Ala Gln Ala Ile Arg Ser Ser Thr 70 75 Arg Pro Ser Leu Pro Ala His Leu Phe Lys Pro Ala Pro Ala Ile Ala 85 90 Leu Ile Val Ser Pro Leu Arg Phe Pro Arg Arg Thr Ser Pro Cys His 105 Leu Ser Gly Pro Pro Ala Pro Pro Cys Arg Thr Leu His Thr Leu Leu 115 120 125 Arg Pro Val Cys Val Val Arg Arg Thr Pro Pro Val Phe Phe Thr Ser 135 140 Phe Thr Pro Ala Arg Ala Ala Val Ala Ser His Pro Thr Pro 150 155

<210> 1804 <211> 102 <212> PRT <213> Homo sapiens

<210> 1805 <211> 54 <212> PRT <213> Homo sapiens

<210> 1806 <211> 56 <212> PRT <213> Homo sapiens

<210> 1807 <211> 47 <212> PRT <213> Homo sapiens

<210> 1808 <211> 119 <212> PRT <213> Homo sapiens

<400> 1808 Met Ala Ala Ser Leu Leu Ala Val Leu Leu Leu Leu Leu Leu Glu Arg 5 10 Gly Met Phe Ser Ser Pro Ser Pro Pro Pro Ala Leu Leu Glu Lys Val 20 25 Phe Gln Tyr Ile Asp Leu His Gln Asp Glu Phe Val Gln Thr Leu Lys 35 40 Glu Trp Val Ala Ile Glu Ser Asp Ser Val Gln Pro Val Pro Arg Phe 55 Arg Gln Glu Leu Phe Arg Met Met Ala Val Ala Ala Asp Thr Leu Gln 75 70 Arg Leu Gly Ala Arg Val Ala Ser Val Asp Met Gly Pro Gln Gln Leu 90 Pro Asp Gly Gln Ser Leu Pro Ile Pro Pro Val Ile Leu Ala Glu Leu 100 Gly Ser Asp Pro Thr Lys Gly 115

<210> 1809 <211> 91 <212> PRT <213> Homo sapiens

<210> 1810 <211> 58 <212> PRT <213> Homo sapiens

<210> 1811 <211> 48 <212> PRT <213> Homo sapiens

<210> 1812 <211> 84 <212> PRT <213> Homo sapiens

Glu Asp Asn Phe Val Ala Leu Ala Thr Gly Gln Lys Gly Phe Gly Tyr
65 70 75 80
Lys Asn Ser \*
83

<210> 1813 <211> 46 <212> PRT <213> Homo sapiens

<210> 1814 <211> 65 <212> PRT <213> Homo sapiens

<210> 1815 <211> 100 <212> PRT <213> Homo sapiens

65 70 75 80

Pro Asn Ala Ile Pro Phe Ile Val Pro His Pro Gln Thr Gly Pro Asn
85 90 95

Val Arg Cys Ser
100

<210> 1816 <211> 115 <212> PRT <213> Homo sapiens <221> misc\_feature <222> (1)...(115) <223> Xaa = any amino acid or nothing

<400> 1816 Met Phe Cys Phe Leu Val Ser Val Leu Tyr Ser Lys Ala Lys Leu Ala Ser Ala Cys Gly Gly Ile Ile Tyr Phe Leu Ser Tyr Val Pro Tyr Met 25 30 20 Tyr Val Ala Ile Arg Glu Glu Val Ala His Asp Lys Ile Thr Ala Phe 40 Glu Lys Cys Ile Ala Ser Leu Met Ser Thr Thr Ala Phe Gly Leu Gly 55 Ser Lys Tyr Phe Ala Leu Tyr Glu Val Pro Gly Val Gly Ile Gln Trp 75 70 His Thr Phe Ser Gln Ser Pro Val Glu Gly Glu Asp Leu Asn Leu Pro 85 90 Pro Pro Pro Pro Met Met Pro Ala Pro Xaa Val Val Tyr Gly Ile Leu 105 Thr Lys \* 114

<210> 1817 <211> 144 <212> PRT <213> Homo sapiens

<400> 1817 Met Val Leu Gly Leu Leu Val Gln Ile Trp Ala Leu Gln Glu Ala Ser 10 Ser Leu Ser Val Gln Gln Gly Pro Asn Leu Leu Gln Val Arg Gln Gly 25 Ser Gln Ala Thr Leu Val Cys Gln Val Asp Gln Ala Thr Ala Trp Glu 40 Arg Leu Arg Val Lys Trp Thr Lys Asp Gly Ala Ile Leu Cys Gln Pro Tyr Ile Thr Asn Gly Ser Leu Ser Leu Gly Val Cys Gly Pro Gln Gly 75 70 Arg Leu Ser Trp Gln Ala Pro Ser His Leu Thr Leu Gln Leu Asp Pro 90 85 Val Ser Leu Asn His Ser Gly Ala Tyr Val Cys Trp Ala Ala Val Glu 105

<210> 1818 <211> 115 <212> PRT <213> Homo sapiens

<400> 1818 Met Gln Ala Asp Arg Gly Gly Val Leu Phe Leu Val Ala Leu Pro Gly Leu Trp Glu Thr Val Leu Arg His Pro Gly Ala Ser Pro Glu Pro Val 20 25 Ser Leu His Thr Gly Leu Ala Ala Glu Pro Leu Leu Gly Trp Arg Ala 40 Glu Val Ala Thr Ala Ala Gly Leu Gln Asp Arg Arg Ile Gly Arg Arg 55 Ser Leu Pro Ala Thr Leu Pro Pro Pro Phe Pro Gln Ala Gly Asp Leu 70 75 Arg Glu Ser Ile Leu Leu Pro Cys Arg Glu Ser Arg Ser Thr Ser 85 90 Trp Leu Ser Pro Tyr Trp Val Pro Glu Ile Pro Gly Thr Leu His Asp Arg Gly Arg 1.15

<210> 1819 <211> 70 <212> PRT <213> Homo sapiens

<210> 1820 <211> 635 <212> PRT <213> Homo sapiens

<400> 1820 Met Leu Arg Ser Leu Leu Val Tyr Met Leu Phe Leu Leu Val Thr Leu 10 Leu Ala Ser Tyr Gly Asp Ala Ser Cys His Gly His Ala Tyr Arg Leu 20 25 Gln Ser Ala Ile Lys Gln Glu Leu His Ser Arg Ala Phe Leu Ala Ile 4.0 Thr Arg Ser Glu Glu Leu Trp Pro Trp Met Ala His Val Leu Leu Pro 55 Tyr Val His Gly Asn Gln Ser Ser Pro Glu Leu Gly Pro Pro Arg Leu 70 Arg Gln Val Arg Leu Gln Glu Ala Leu Tyr Pro Asp Pro Pro Gly Pro 90 Arg Val His Thr Cys Ser Ala Ala Gly Gly Phe Ser Thr Ser Asp Tyr 100 105 Asp Val Gly Trp Glu Ser Pro His Asn Gly Ser Gly Thr Trp Ala Tyr 115 120 125 Ser Ala Pro Asp Leu Leu Gly Ala Trp Ser Trp Gly Ser Cys Ala Val 135 140 Tyr Asp Ser Gly Gly Tyr Val Gln Glu Leu Gly Leu Ser Leu Glu Glu 155 150 Ser Arg Asp Arg Leu Arg Phe Leu Gln Leu His Asn Trp Leu Asp Asn 165 170 Arg Ser Arg Ala Val Phe Leu Glu Leu Thr Arg Tyr Ser Pro Ala Val 185 180 Gly Leu His Ala Ala Val Thr Leu Arg Leu Glu Phe Pro Ala Ala Gly 200 Arg Ala Leu Ala Ala Leu Ser Val Arg Pro Phe Ala Leu Arg Arg Leu 215 220 Ser Ala Gly Leu Ser Leu Pro Leu Leu Thr Ser Val Cys Leu Leu Leu 230 235 Phe Ala Val His Phe Ala Val Ala Glu Ala Arg Thr Trp His Arg Glu 250 245 Gly Arg Trp Arg Val Leu Arg Leu Gly Ala Trp Ala Arg Trp Leu Leu 265 Val Ala Leu Thr Ala Ala Thr Ala Leu Val Arg Leu Ala Gln Leu Gly 280 285 Ala Ala Asp Arg Gln Trp Thr Arg Phe Val Arg Gly Arg Pro Arg Arg 295 300 Phe Thr Ser Phe Asp Gln Val Ala His Val Ser Ser Ala Ala Arg Gly 310 315 Leu Ala Ala Ser Leu Leu Phe Leu Leu Leu Val Lys Ala Ala Gln His 325 330 Val Arg Phe Val Arg Gln Trp Ser Val Phe Gly Lys Thr Leu Cys Arg 345 Ala Leu Pro Glu Leu Leu Gly Val Thr Leu Gly Leu Val Val Leu Gly 360 Val Ala Tyr Ala Gln Leu Ala Ile Leu Leu Val Ser Ser Cys Val Asp 37**5** 380 Ser Leu Trp Ser Val Ala Gln Ala Leu Leu Val Leu Cys Pro Gly Thr · 390 395 Gly Leu Ser Thr Leu Cys Pro Ala Glu Ser Trp His Leu Ser Pro Leu 405 410 Leu Cys Val Gly Leu Trp Ala Leu Arg Leu Trp Gly Ala Leu Arg Leu 425 Gly Ala Val Ile Leu Arg Trp Arg Tyr His Ala Leu Arg Gly Glu Leu 440

Tyr Arg Pro Ala Trp Glu Pro Gln Asp Tyr Glu Met Val Glu Leu Phe 455 Leu Arg Arg Leu Arg Leu Trp Met Gly Leu Ser Lys Val Lys Glu Phe 470 475 Arg His Lys Val Arg Phe Glu Gly Met Glu Pro Leu Pro Ser Arg Ser 485 490 Ser Arg Gly Ser Lys Val Ser Pro Asp Val Pro Pro Pro Ser Ala Gly 500 505 510 Ser Asp Ala Ser His Pro Ser Thr Ser Ser Ser Gln Leu Asp Gly Leu 520 525 Ser Val Ser Leu Gly Arg Leu Gly Thr Arg Cys Glu Pro Glu Pro Ser 535 540 Arg Leu Gln Ala Val Phe Glu Ala Leu Leu Thr Gln Phe Asp Arg Leu 550 555 Asn Gln Ala Thr Glu Asp Val Tyr Gln Leu Glu Gln Gln Leu His Ser 570 565 Leu Gln Gly Arg Arg Ser Ser Arg Ala Pro Ala Gly Ser Ser Arg Gly 580 585 Pro Ser Pro Gly Leu Arg Pro Ala Leu Pro Ser Arg Leu Ala Arg Ala 605 595 600 Ser Arg Gly Val Asp Leu Ala Thr Gly Pro Ser Arg Thr Pro Leu Arg 615 62**0** Ala Lys Asn Lys Val His Pro Ser Ser Thr 630

<210> 1821 <211> 84 <212> PRT <213> Homo sapiens

<400> 1821 Met Gly Ser Thr .Trp Gly Ser Pro Gly Trp Val Arg Leu Ala Leu Cys 5 10 Leu Thr Gly Leu Met Leu Ser Leu Tyr Thr Leu His Val Lys Ala Ala 20 25 Arg Ala Arg Asn Arg Asp Tyr Arg Ala Leu Cys Asp Val Gly Thr Val 40 Ile Ser Cys Thr Arg Val Phe Tyr Ser Lys Leu Pro Ala Asp Thr Leu 55 60 Asp Leu Cys Pro Asp Ala Ala Glu Leu Pro Gly Val Ser Arg Trp Phe 70 75 65 Cys Leu Pro Gly 84

<210> 1822 <211> 108 <212> PRT <213> Homo sapiens

Gly Ser Ala Leu Phe Pro Ser Ala Ala Ala Val Gly Lys Gln Gly Ser As As As Val Gly Lys Gln Gly Ser As As Cys Fro Val Cys Gln His Pro Arg Sor As Cys Fro Val Cys Gln His Pro As Sor As Cys Fro Val Cys Gln His Pro As Sor As Cys Fro Val Cys Gln His Pro As Sor As Cys Gln Pro As Cys G

<210> 1823 <211> 74 <212> PRT

<213> Homo sapiens

<210> 1824 <211> 58 <212> PRT <213> Homo sapiens

<210> 1825 <211> 225 <212> PRT <213> Homo sapiens

<400> 1825

Met Ala Cys Lys Gly Leu Leu Gln Gln Val Gln Gly Pro Arg Leu Pro 10 Trp Thr Arg Leu Leu Leu Leu Leu Val Phe Ala Val Gly Phe Leu 25 Cys His Asp Leu Arg Ser His Ser Ser Phe Gln Ala Ser Leu Thr Gly 40 Arg Leu Leu Arg Ser Ser Gly Phe Leu Pro Ala Ser Gln Gln Ala Cys 55 60 Ala Lys Leu Tyr Ser Tyr Ser Leu Gln Gly Tyr Ser Trp Leu Gly Glu 75 70 Thr Leu Pro Leu Trp Gly Ser His Leu Leu Thr Val Val Arg Pro Ser 85 90 Leu Gln Leu Ala Trp Ala His Thr Asn Ala Thr Val Ser Phe Leu Ser 100 105 Ala His Cys Ala Ser His Leu Ala Trp Phe Gly Asp Ser Leu Thr Ser 115 120 Leu Ser Gln Arg Leu Gln Ile Gln Leu Pro Asp Ser Val Asn Gln Leu 135 140 Leu Arg Tyr Leu Arg Glu Leu Pro Leu Leu Phe His Gln Asn Val Leu 150 155 Leu Pro Leu Trp His Leu Leu Glu Ala Leu Ala Trp Ala Gln Glu 170 165 His Cys His Glu Ala Cys Arg Gly Glu Val Thr Trp Asp Cys Met Lys 185 Thr Gln Leu Ser Glu Ala Val His Trp Thr Trp Leu Cys Leu Gln Asp 200 205 Ile Thr Val Ala Phe Leu Asp Trp Ala Leu Ala Leu Ile Ser Gln Gln 215

<210> 1826 <211> 119 <212> PRT <213> Homo sapiens

<400> 1826 Met Tyr Arg Glu Val Cys Ser Ile Arg Phe Leu Phe Thr Ala Val Ser 5 10 Leu Leu Ser Leu Phe Leu Ser Ala Phe Trp Leu Gly Leu Leu Tyr Leu 20 25 Val Ser Pro Leu Glu Asn Glu Pro Lys Glu Met Leu Thr Leu Ser Glu 45 40 Tyr His Glu Arg Ala Arg Ser Gln Gly Gln Gln Leu Leu Gln Phe Gln 55 Ala Glu Leu Asp Lys Leu His Lys Glu Ala Ser Leu Val Cys Gly Cys Pro Ser Leu Arg Glu Val Pro Ser Ser Ala Val Ser Arg Leu Glu Pro 85 90 Pro Ser Ile Ala Gln Pro Leu Leu Ser Arg Leu Gln Leu Tyr Leu Ser 100 105 110 Asp Pro Ser Ser Tyr Leu Val 119 115

<210> 1827 <211> 58 <212> PRT <213> Homo sapiens

<400> 1827

<210> 1828 <211> 102 <212> PRT <213> Homo sapiens

<400> 1828 Met Gln Pro Ser Gly Leu Glu Gly Pro Gly Thr Phe Gly Arg Trp Pro Leu Leu Ser Leu Leu Leu Leu Leu Leu Leu Gln Pro Val Thr Cys 20 25 Ala Tyr Thr Thr Pro Gly Pro Pro Arg Ala Leu Thr Thr Leu Gly Ala 40 45 Pro Arg Ala His Thr Met Pro Gly Thr Tyr Ala Pro Ser Thr Thr Leu 55 Ser Ser Pro Ser Thr Gln Gly Leu Gln Glu Gln Ala Arg Ala Leu Met 70 75 Arg Asp Phe Pro Leu Val Asp Gly His Asn Asp Leu Pro Leu Val Leu 90 85

Arg Gln Val Tyr His Asn 100 102

> <210> 1829 <211> 88 <212> PRT <213> Homo sapiens

Met Leu Ser Asp Tyr Ala Lys Pro 85

> <210> 1830 <211> 120 <212> PRT <213> Homo sapiens

<400> 1830 Met Lys Trp Arg Arg Lys Ser Ala Tyr Trp Lys Ala Leu Lys Val Phe Lys Leu Pro Val Glu Phe Leu Leu Leu Thr Val Pro Val Val Asp 20 Pro Asp Lys Asp Asp Gln Asn Trp Lys Arg Pro Leu Asn Cys Leu His 40 Leu Val Ile Ser Pro Leu Val Val Leu Thr Leu Gln Ser Gly Thr 55 Tyr Gly Val Tyr Glu Ile Gly Gly Leu Val Pro Val Trp Val Val Val Val Ile Ala Gly Thr Ala Leu Ala Ser Val Thr Phe Phe Ala Thr Ser Asp Ser Gln Pro Pro Arg Leu His Trp Leu Phe Ala Phe Leu Gly Phe 105 100 Leu Thr Ser Ala Leu Trp Ile Asn

<210> 1831 <211> 64 <212> PRT <213> Homo sapiens

<400> 1831 Met Phe Trp Arg Gly Trp Gly Ala Pro Leu Trp Ala Trp Pro Thr Leu 10 Leu Thr Pro Ile Lys Cys Ser Ser Leu Tyr Asp Ser Phe Phe Ser Pro 25 Thr Asp Ala Leu Gly Leu Glu Ser Leu Leu Gly Thr Ala Ser Leu Trp 40 45 Pro Leu Leu Ser Leu Thr Glu Leu Pro Ala Leu Leu Gln Met \* 55 60

<210> 1832 <211> 89 <212> PRT <213> Homo sapiens

<400> 1832 Met Gly Ile Lys His Phe Ser Gly Leu Phe Val Leu Leu Cys Ile Gly 5 10 Phe Gly Leu Ser Ile Leu Thr Thr Ile Gly Glu His Ile Val Tyr Arg

<210> 1833 <211> 60 <212> PRT <213> Homo sapiens

<210> 1834 <211> 62 <212> PRT <213> Homo sapiens

<210> 1835 <211> 71 <212> PRT <213> Homo sapiens

 Ser Pro Leu Trp Glu Val Val Phe Cys His Thr Pro Cys Phe Arg Ala

 35
 40
 45

 Gln Pro Gln Leu Asp Arg Ala Gly Ser Ser Phe Leu Ile Tyr Pro Ser
 50
 55

 Pro His Ser Thr Ser Asn
 \*

 65
 70

<210> 1836 <211> 110 <212> PRT <213> Homo sapiens

<400> 1836 Met Leu Met Tyr Met Phe Tyr Val Leu Pro Phe Cys Gly Leu Ala Ala 10 Tyr Ala Leu Thr Phe Pro Gly Cys Ser Trp Leu Pro Asp Trp Ala Leu 25 Val Phe Ala Gly Gly Ile Gly Gln Ala Gln Phe Ser His Met Gly Ala 40 Ser Met His Leu Arg Thr Pro Phe Thr Tyr Arg Val Pro Glu Asp Thr Trp Gly Cys Phe Phe Val Cys Asn Leu Leu Tyr Ala Leu Gly Pro His 70 75 Leu Leu Ala Tyr Arg Cys Leu Gln Trp Pro Ala Phe Phe His Gln Pro 85 90 Pro Pro Ser Asp Pro Leu Ala Leu His Lys Lys Gln His \* 105

<210> 1837 <211> 91 <212> PRT <213> Homo sapiens

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<400> 1837 Met Leu Leu Leu Thr Trp Pro Tyr Ile Leu Leu Gly Phe Leu Phe 5 10 Cys Ala Phe Val Val Val Asn Gly Gly Ile Val Ile Gly Asp Arg Ser 20 25 Ser His Glu Ala Cys Leu His Phe Pro Gln Leu Phe Tyr Phe Phe Ser Phe Thr Leu Phe Phe Ser Phe Pro His Leu Leu Ser Pro Ser Lys Ile 55 60 Lys Thr Phe Leu Ser Leu Val Trp Lys Arg Arg Ile Leu Phe Phe Val 70 Val Thr Leu Val Ser Val Phe Leu Val Trp Asn 90 91 85

<210> 1838 <211> 201 <212> PRT <213> Homo sapiens

<400> 1838 Met Pro Ile Gly Leu Arg Gly Leu Met Ile Ala Val Met Leu Ala Ala 10 Leu Met Ser Ser Leu Thr Ser Ile Phe Asn Ser Ser Ser Thr Leu Phe 20 25 Thr Met Asp Ile Trp Arg Arg Leu Arg Pro Arg Ser Gly Glu Arg Glu 40 Leu Leu Val Gly Arg Leu Val Ile Val Ala Leu Ile Gly Val Ser 55 Val Ala Trp Ile Pro Val Leu Gln Asp Ser Asn Ser Gly Gln Leu Phe 70 75 Ile Tyr Met Gln Ser Val Thr Ser Ser Leu Ala Pro Pro Val Thr Ala 90 85 Val Phe Val Leu Gly Val Phe Trp Arg Arg Ala Asn Glu Gln Gly Ala 100 105 Phe Trp Gly Leu Ile Ala Gly Leu Val Val Gly Ala Thr Arg Leu Val 120 125 115 Leu Glu Phe Leu Asn Pro Ala Pro Pro Cys Gly Glu Pro Asp Thr Arg 140 135 Pro Ala Val Leu Gly Ser Ile His Tyr Leu His Phe Ala Val Ala Leu 155 150 Phe Ala Leu Ser Gly Ala Val Val Ala Gly Ser Leu Leu Thr Pro 165 170 Pro Pro Gln Ser Val Gln Ile Glu Asn Leu Thr Trp Trp Thr Leu Ala 180 185 190 Gln Asp Val Pro Leu Gly Thr Lys Ala 200 201 195

<210> 1839

<211> 130

<212> PRT

<213> Homo sapiens

<221> misc\_feature

<222> (1)...(130)

<223> Xaa = any amino acid or nothing

<400> 1839

Met Leu Phe Phe Leu Gln Ser Leu Phe Met Leu Ala Thr Val Val Leu 10 Tyr Phe Ser His Leu Lys Glu Tyr Val Ala Ser Met Val Phe Ser Leu 20 25 Ala Leu Gly Trp Thr Asn Met Leu Tyr Tyr Thr Arg Gly Phe Gln Gln Met Gly Ile Tyr Ala Val Met Ile Glu Lys Met Ile Leu Arg Asp Leu 55 Cys Arg Phe Met Phe Val Tyr Ile Val Phe Leu Phe Gly Phe Ser Thr 70 75` Ala Val Val Thr Leu Ile Glu Asp Gly Lys Asn Asp Ser Leu Pro Ser 85 90 Glu Ser Thr Ser His Arg Trp Arg Gly Phe Ser Xaa Thr Pro Leu Xaa 105 Leu Leu His Lys Leu Tyr Ser Thr Cys Leu Glu Leu Ser Asn Ser Thr 120 125

Xaa Asp 130

> <210> 1840 <211> 47 <212> PRT <213> Homo sapiens

<400> 1840

<210> 1841 <211> 82 <212> PRT <213> Homo sapiens

<400> 1841

Met Thr Ala Arg Leu Met Arg Ser Leu Leu Ala Ala Gln Leu Thr Phe 5 10 Val Tyr Arg Val Ala His Leu Met Asn Val Ala Gln Arg Ile Arg Gly 20 25 Asn Arg Pro Ile Lys Asn Glu Arg Leu Leu Ala Leu Leu Gly Asp Asn 40 35 Glu Lys Met Asn Leu Ser Asp Val Glu Leu Ile Pro Leu Pro Leu Glu 55 Pro Gln Val Lys Ile Arg Gly Ile Ile Pro Glu Thr Ala Thr Leu Phe 65 75 Lys Ser 82

<210> 1842 <211> 77 <212> PRT <213> Homo sapiens

65 70 75 77

<210> 1843 <211> 109 <212> PRT <213> Homo sapiens

<400> 1843 Met Met His Asn Ile Ile Val Lys Glu Leu Ile Val Thr Phe Phe Leu 10 Gly Ile Thr Val Val Gln Met Leu Ile Ser Val Thr Gly Leu Lys Gly 20 25 Val Glu Ala Gln Asn Gly Ser Glu Ser Glu Val Phe Val Gly Lys Tyr 40 Glu Thr Leu Val Phe Tyr Trp Pro Ser Leu Leu Cys Leu Ala Phe Leu 55 Leu Gly Arg Phe Leu His Met Phe Val Lys Ala Leu Arg Val His Leu 75 70 Gly Trp Glu Leu Gln Val Glu Glu Lys Ser Val Leu Glu Val His Gln 90 85 Gly Glu His Val Lys Gln Leu Leu Arg Ile Pro Arg Pro 105

<210> 1844 <211> 85 <212> PRT <213> Homo sapiens <221> misc\_feature

<222> (1)...(85) <223> Xaa = any amino acid or nothing

<210> 1845 <211> 110 <212> PRT <213> Homo sapiens

<400> 1845 Met Tyr Ala Leu Tyr Ile Thr Val His Gly Tyr Phe Leu Ile Thr Phe 10 Leu Phe Gly Met Val Val Leu Ala Leu Val Val Trp Lys Ile Phe Thr 25 Leu Ser Arg Ala Thr Ala Val Lys Glu Arg Gly Lys Asn Arg Lys Lys 35 40 Val Leu Thr Leu Leu Gly Leu Ser Ser Leu Val Gly Val Thr Trp Gly 55 60 Leu Ala Ile Phe Thr Pro Leu Gly Leu Ser Thr Val Tyr Ile Phe Ala 70 75 Leu Phe Asn Ser Leu Gln Gly Val Phe Ile Cys Cys Trp Phe Thr Ile 85 90 Leu Tyr Leu Pro Ser Gln Ser Thr Thr Val Ser Ser Ser Thr 105

<210> 1846 <211> 94 <212> PRT <213> Homo sapiens

<210> 1847 <211> 1300 <212> PRT <213> Homo sapiens

				٥.											
Cvc	Dro	Λαn	Па гас	85	Com	Dho	Crra	777	90	7707	TT-2	3	Pro	95 mb	a
Cys	110	Asp	100	GIU	Ser	FILE	Cys	105	GIU	vaı	nıs	ASII	110	THE	Ser
Pro	Pro	Ser		Lys	Lvs	Ala	Pro		Pro	Ser	Glv	Ala	Ser	Gln	Thr
		115		-	-		120				1	125			
Ile	Lys	Ser	Thr	Thr	Lys	Arg	Ser	Pro	Lys	Pro	Pro	Asn	Lys	Lys	Lys
	130	_				135	_				140				
	Lys	Lys	Val	Ile		Ser	Glu	Glu	Ile		Glu	Glu	His	Ser	
145 Ser	Glu	λen	Gln	Glu	150	Sar	Car	cor	ear.	155	Co~	Com	Ser	C 0 ==	160
Der	GIU	ASII	Gili	165	DET	261	261	Ser	170	Set	ser	Ser	ser	175	Ser
Ser	Thr	Ile	Trp	-	Ile	Lys	Ser	Ser		Asn	Ser	Ala	Ala		Arq
			180					185					190		
Glu	Leu	Gln	Lys	Lys	Leu	Lys	Val	Lys	Asp	Asn	Lys	Lys	Asn	Arg	Thr
<b>7</b>	<b>T</b>	195	<b>5</b>		_	_	200	_			_	205			_
ьys	ьуs 210	тÀв	Pro	Tnr	Pro	ьуs 215	Pro	Pro	Val	Val		GLu	Ala	GLY	Ser
Glv		Asp	Asn	Glv	Asp		Lvs	Val	Thr	Thr	220 Pro	Δsn	Thr	Ser	Thr
225					230		-1-			235				501	240
Thr	Gln	His	Asn	Lys	Val	Ser	Thr	Ser	Pro	Lys	Ile	Thr	Thr	Ala	Lys
_		_	_	245	_	_			250					255	
Pro	Ile	Asn		Arg	Pro	Ser	Leu		Pro	Asn	Ser	Asp	Thr	Ser	Lys
Glu	Thr	Ser	260	Thr	Val	Δan	Tave	265	Thr	Thr	₹7:a T	<b>G333</b>	270 Thr	Tare	Glu
		275			• • • •	11011	280	OLU	4111	1111	var	285	7111	nys	GIU
Thr	Thr	Thr	Thr	Asn	Lys	Gln	Thr	Ser	Thr	Asp	Gly	Lys	Glu	Lys	Thr
	290					295					300				
	Ser	Ala	Lys	Glu		Gln	Ser	Ile	Glu		Thr	Ser	Ala	Lys	
305	Δla	Pro	Thr	Ser	310	Val	T.e.ii	7A T 🖘	Tara	315 Pro	ሞኩሎ	Dro	Lys	77-	320
шси	TILL	110	1111	325	шуз	val	шец	Ата	330	FLO	TILL	PLO	пуѕ	335	Gru
Thr	Thr	Thr	Lys	Gly	Pro	Ala	Leu	Thr	Thr	Pro	Lys	Glu	Pro		Pro
	_		340					345					350		
Thr	Thr		Lys	Glu	Pro	Ala		Thr	Thr	Pro	Lys		Pro	Thr	Pro
Thr	Thr	355	Tare	Sar	715	Dro	360 Thr	Thr	Dro	T 7.00	<i>α</i> 1	365	Ala	Dana	mbaa
1 111	370	116	БуБ	SCI	AIG	375	1111	1111	PIO	пуs	380	PLO	Ата	PLO	THE
Thr		Lys	Ser	Ala	Pro		Thr	Pro	Lys	Glu		Ala	Pro	Thr	Thr
385					390					395					400
Thr	Lys	Glu	Pro		Pro	Thr	Thr	Pro-		Glu	Pro	Ala	Pro		Thr
Thr	Taza	CI.	Dwo	405	Dwo	mb.~	mb w	mla sa	410		77-	D	Thr	415	D
1111	цуз	Gru	420	на	PLO	1111	1111	425	пĀв	ser	Ala	PLO	430	THE	PIO
Lys	Glu	Pro		Pro	Thr	Thr	Pro		Lys	Pro	Ala	Pro	Thr	Thr	Pro
		435					440					445			
ГÀЗ		Pro	Ala	Pro	Thr		Pro	Lys	Glu	Pro		Pro	Thr	Thr	Pro
T	450	7)	77	D	m1	455	<b>.</b>	~7	_		460			_	_
цув 465	GIU	PLO	Ala	Pro	470	ınr	гув	GIU	Pro	475	Pro	Thr	Thr	Pro	
	Pro	Ala	Pro	Thr		Pro	Lvs	Lvs	Pro		Pro	Thr	Thr	Pro	480 Lvs
				485				-1-	490					495	
Glu	${\tt Pro}$	Ala	Pro	Thr	Thr	Pro	Lys	Glu	Pro	Ala	Pro	Thr	Thr	Thr	Lys
<b>~-</b>	_	_	500			_	_	505	_				510		
GLu	Pro		Pro	Thr	Thr	Pro		Glu	Pro	Ala	Pro		Thr	Thr	Lys
Ser	Ala	515 Pro	Thr	Thr	Thr	Lve	520 Glu	Pro	<b>Δ</b> 1 =	Pro	Thr	525 Thr	Thr	Lare	Ser
	530				~ ***	535	Jiu	210	-A-C	110	540	1111	1111	nys	DGT
Ala	Pro	Thr	Thr	Pro	Lys		Pro	Ser	Pro	Thr		Thr	Lys	Glu	Pro
545					550					555					560

Ala	Pro	Thr	Thr	Pro 565	Lys	Glu	Pro	Ala	Pro 570	Thr	Thr	Pro	Lys	Lys 575	Pro
Ala	Pro	Thr	Thr 580		Lys	Glu	Pro	Ala 585		Thr	Thr	Pro	Lys 590		Pro
Ala	Pro	Thr 595	Thr	Thr	Lys	Lys	Pro 600	Ala	Pro	Thr	Ala	Pro 605		Glu	Pro
Ala	Pro 610	Thr	Thr	Pro	Lys	Glu 615	Thr	Ala	Pro	Thr	Thr 620	Pro	Lys	Lys	Leu
Thr 625	Pro	Thr	Thr	Pro	Glu 630	Lys	Leu	Ala	Pro	Thr 635	Thr	Pro	Glu	Lys	Pro 640
Ala	Pro	Thr	Thr	Pro 645	Glu	Glu	Leu	Ala	Pro 650	Thr	Thr	Pro	Glu	Glu 655	Pro
			660			Glu		665					670		
		675				Glu	680					685			
	690				_	Glu 695					700		_		
705					710	Gly				715					720
				725		Lys			730					735	
			740			Ser		745			_		750		
		755				Pro	760					765			
	770					Pro 775					780				
785					790	Pro				795					800
Glu	Leu	Ala	Pro	Thr 805	Thr	Thr	ГÀз	Gly	Pro 810	Thr	Ser	Thr	Thr	Ser 815	Asp
			820			Pro		825					830		_
		835				Pro	840					845			
	850					Ser 855					860				_
865					870	Lys				875					880
Ser	Ala	Glu	Pro	Thr 885	Pro	Lys	Ala	Leu	Glu 890	Asn	Ser	Pro	Lys	Glu 895	Pro
Gly	Val	Pro	Thr 900	Thr	Lys	Thr		Ala 905	Ala	Thr	ГÀЗ	Pro	Glu 910	Met	Thr
		915				Thr	920					925			
	930					Pro 935					940				
Thr 945	Glu	Lys	Thr	Thr	Glu 950	Ser	Lys	Ile	Thr	Ala 955	Thr	Thr	Thr	Gln	Val 960
Thr	Ser	Thr	Thr	Thr 965	Gln	Asp	Thr	Thr	Pro 970	Phe	Lys	Ile	Thr	Thr 975	Leu
Lys	Thr	Thr	Thr 980	Leu	Ala	Pro	Lys	Val 985	Thr	Thr	Thr	Lys	Lys 990		Ile
Thr	Thr	Thr 995	Glu	Ile	Met	Așn J	Lys L000		Glu	Glu		Ala L005		Pro	Lys
	Arg	Ala	Thr	Asn		Lys 1015	Ala	Thr	Thr		Lys 1020	Pro	Gln	Lys	Pro
		Ala	Pro	Lys		Pro	Thr	Ser	Thr			Pro	Lys	Thr	Met

1030 1035 Pro Arg Val Arg Lys Pro Lys Thr Thr Pro Thr Pro Arg Lys Met Thr 1045 1050 1055 Ser Thr Met Pro Glu Leu Asn Pro Thr Ser Arg Ile Ala Glu Ala Met 1060 1065 1070 Leu Gln Thr Thr Thr Arg Pro Asn Gln Thr Pro Asn Ser Lys Leu Val 1075 1080 1085 Glu Val Asn Pro Lys Ser Glu Asp Ala Gly Gly Ala Glu Gly Glu Thr 1090 1095 1100 Pro His Met Leu Leu Arg Pro His Val Phe Met Pro Glu Val Thr Pro 1105 1110 1115 Asp Met Asp Tyr Leu Pro Arg Val Pro Asn Gln Gly Ile Ile Ile Asn 1125 1130 Pro Met Leu Ser Asp Glu Thr Asn Ile Cys Asn Gly Lys Pro Val Asp 1140 1145 1150 Gly Leu Thr Thr Leu Arg Asn Gly Thr Leu Val Ala Phe Arg Gly His 1155 1160 1165 Tyr Phe Trp Met Leu Ser Pro Phe Ser Pro Pro Ser Pro Ala Arg Arg 1170 1175 1180 Ile Thr Glu Val Trp Gly Ile Pro Ser Pro Ile Asp Thr Val Phe Thr 1190 1195 1200 Arg Cys Asn Cys Glu Gly Lys Thr Phe Phe Phe Lys Asp Ser Gln Tyr 1205 1210 1215 Trp Arg Phe Thr Asn Asp Ile Lys Asp Ala Gly Tyr Pro Lys Pro Ile 1220 1225 1230 Phe Lys Gly Phe Gly Gly Leu Thr Gly Gln Ile Val Ala Ala Leu Ser 1245 1240 Thr Ala Lys Tyr Lys Asn Trp Pro Glu Ser Val Tyr Phe Phe Lys Arg 1250 1255 1260 Gly Gly Ser Ile Gln Gln Tyr Ile Tyr Lys Gln Glu Pro Val Gln Lys 1265 1270 1275 1280 Cys Pro Gly Arg Arg Pro Ala Leu Asn Tyr Pro Val Tyr Gly Glu Thr 1285 1290 Asp Thr Gly \* 1299

<210> 1848 <211> 103 <212> PRT <213> Homo sapiens

<400> 1848

Met Asn Pro Ala Val Arg Gln Arg Cys Leu Leu Phe Cys Phe Gln Gln 5 10 Lys Leu Ile Leu Ser His Phe Phe Leu Leu Gln Val Pro Gln Trp Cys 25 Ala Glu Tyr Cys Leu Ser Ile His Tyr Gln His Gly Gly Val Ile Cys 40 Thr Gln Val His Lys Gln Thr Val Val Gln Leu Ala Leu Arg Val Ala 55 Asp Glu Met Asp Val Asn Ile Gly His Glu Val Gly Tyr Val Ile Pro 70 75 Phe Glu Asn Cys Cys Thr Asn Glu Thr Ile Leu Arg Leu Val Cys Gly 85 90 Val Gln Ser Ala Pro Cys \* 100 102

WO 01/54477

<210> 1849 <211> 50 <212> PRT <213> Homo sapiens

<210> 1850 <211> 84 <212> PRT <213> Homo sapiens

<400> 1850 Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His 1 5 10 Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile 25 Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln . 35 40 45 Ser Lys Leu Val Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro 55 Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln 70 75 Thr Phe Leu Ser 84

<210> 1851 <211> 51 <212> PRT <213> Homo sapiens

<210> 1852 <211> 54 <212> PRT <213> Homo sapiens

<210> 1853 <211> 129 <212> PRT <213> Homo sapiens

· <400> 1853 Met Ala Val Val Arg Val Met Val Val Val Arg Val Thr Ala Val Val 10 Arg Val Met Val Val Val Val Val Val Arg Val Met Val Val 20 25 Val Arg Ile Thr Ala Val Leu Arg Val Met Val Val Arg Ile Met 40 Ala Val Ile Arg Val Met Val Val Val Arg Val Thr Ala Ile Val Gly . . 55 60 Val Met Val Val Ile Arg Val Thr Ala Ile Val Ser Ile Met Val Val 70 75 Val Arg Val Met Val Val Val Arg Val Met Val Ala Arg Pro Met 90 Val Val Val Arg Val Met Ala Val Val Arg Val Met Ala Asp Ser Ala 100 105 Leu Arg Ala Ile Cys Ser Ser Ser Leu Asn Val Thr Phe Ser Leu Glu 120 125

<210> 1854 <211> 190 <212> PRT <213> Homo sapiens <221> misc\_feature <222> (1)...(190) <223> Xaa = any amino acid or nothing

<400> 1854

Met Ser Cys Phe Gly Leu Leu Gly Gly Leu Thr Pro Arg Val Leu 10 Ser Thr Glu Glu Gln Leu Pro Pro Gly Phe Pro Ser Ile Asp Met Gly 20 25 Pro Gln Leu Lys Val Val Glu Lys Ala Arg Thr Ala Thr Met Leu Cys 40 Ala Ala Gly Gly Asn Pro Asp Pro Glu Ile Ser Trp Phe Lys Asp Phe 55 Leu Pro Val Asp Pro Ala Thr Ser Asn Gly Arg Ile Lys Gln Leu Arg 70 Ser Gly Glu Gln Arg Ala Gly Val Lys Gly Pro Cys Arg Pro Gln Asn Lys Arg Leu Val Arg Ser Gln His Ser Leu Leu Pro Trp Ala Trp Ala 105 Pro Pro Gly Leu Ser Gly Gly Tyr Leu Val Gly Trp Ala Gly Ser Tyr 120 Cys Arg Cys Ala Trp Leu Arg Glu Glu Ser Ser Trp Leu Ala Val Pro 135 140 Leu Pro Ser Ser Asp Cys Gln Thr Pro Asp Phe Gly Pro Val Leu Pro 150 155 Leu Pro Ala His Val Met Cys Gln Cys Gly Gly Leu Phe Lys Gly Ala 170 Leu Trp Met Leu Thr Leu Leu Leu Pro Cys Xaa Leu Ala

<210> 1855 <211> 78 <212> PRT <213> Homo sapiens

<210> 1856 <211> 67 <212> PRT <213> Homo sapiens

35 40 45
Thr Leu Met Gly Ser Glu Met Pro Met Ala Leu Ala Ala Glu Thr Trp
50 55 60
Leu Leu \*
65 66

<210> 1857 <211> 107 <212> PRT

<213> Homo sapiens

<400> 1857 Met Leu Leu Met Phe Leu Leu Ala Thr Cys Leu Leu Ala Ile Ile Phe 10 Val Pro Gln Glu Met Gln Thr Leu Arg Val Val Leu Ala Thr Leu Gly 25 20 Val Gly Ala Ala Ser Leu Gly Ile Thr Cys Ser Thr Ala Gln Glu Asn 40 Glu Leu Ile Pro Ser Ile Ile Arg Gly Arg Ala Thr Gly Ile Thr Gly 55 60 Asn Phe Ala Asn Ile Gly Gly Ala Leu Ala Ser Leu Val Met Ile Leu 75 70 Ser Ile Tyr Ser Arg Pro Leu Pro Trp Ile Ile Tyr Gly Val Phe Ala 85 90 Ile Leu Ser Gly Leu Val Val Leu Leu Pro

105 107

<210> 1858 <211> 134 <212> PRT <213> Homo sapiens

100

<400> 1858 Met Ile Pro Pro Ala Ile Phe Trp Val Leu Ile Ile Phe Gly Trp Thr Leu Val Tyr Gly Phe Val Tyr Phe Thr Thr Gly Glu Thr Ile Met Asp 25 Lys Leu Leu Arg Val Leu Tyr Trp Ile Leu Val Lys Thr Phe Phe Arg 35 40 Glu Ile Ser Val Ser His Gln Glu Arg Ile Pro Lys Asp Lys Pro Val 55 Met Leu Val Cys Ala Pro His Ala Asn Gln Phe Val Asp Gly Met Val 70 Ile Ser Thr His Leu Asp Arg Lys Val Tyr Phe Val Gly Ala Ala Ser 85 Ser Phe Arg Lys Tyr Lys Val Val Gly Leu Phe Met Lys Leu Met Ala 105 110 Ser Ile Ile Ser Gly Glu Arg His Gln Asp Val Lys Lys Val Leu Thr 115 120 Gly Met Ala Thr Glu Lys

<210> 1859 <211> 82 <212> PRT <213> Homo sapiens

<400> 1859

 Met
 Phe
 Tyr
 Val
 Lys
 Ala
 Glu
 Phe
 Leu
 Val
 Ser
 Phe
 Ser
 Cys
 Pro
 Trp

 Leu
 Thr
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 Leu
 Met
 Ser
 Cys
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 Trp
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<210> 1860 <211> 46 <212> PRT <213> Homo sapiens

<210> 1861 <211> 128 <212> PRT <213> Homo sapiens

105 Gly Ile Tyr Phe Leu Gly Gln Ala His Val Ile Ser Lys Leu Asn Met 120 125 128

<210> 1862 <211> 58 <212> PRT <213> Homo sapiens

<400> 1862

Met Trp Asp Met Leu Pro Trp Gly Ile Thr Trp Val Leu Leu Thr Thr 10 Gln Leu His Ser Pro Leu Leu Tyr Val Ile Gly Phe Thr Tyr Trp Val 20 25 Cys Lys Gly Asp Arg Asp Ser Tyr Leu Glu Glu Asn Ser Arg Glu Thr 40 Ala Ser Val Tyr Thr Ser Val Leu Ser 55 57

<210> 1863 <211> 50 <212> PRT <213> Homo sapiens

<400> 1863 Met Thr Gln Asp Leu Val Leu Thr Val Pro Phe Met Gly Cys Leu Leu 5 10 Ile Leu Val Asp Gly Leu Lys Pro Asn Arg Pro Ala Tyr Ile Gln Thr 20 25 Gly Ser Gln Ala Thr Gln Ala Gly Val Gln Trp His Asn Tyr Gly Ser Leu \* 49

<210> 1864 <211> 90 <212> PRT <213> Homo sapiens

<400> 1864 Met Val Ala Ser Ala Ala Gln Leu Leu Ser His Val Cys Leu Gly Gly 1 5. 10 15 Leu Gln Leu Leu His Ser Phe Leu Ser Ser Leu Gln Leu Pro Ala Leu 20 25 Leu Leu Lys Leu Ala Pro Glu Ala Leu Ala Leu Phe Thr Ser Ile Leu 35 40 Lys Ser Ala Leu Val Val His Asp Phe Ser Thr Gln Leu Glu Leu Glu

Gly Val Glu Leu Leu Val Cys Ser Pro Leu Glu Ala Leu Gly Pro Leu 65 70 75 80

Leu Cys Leu Gly Glu Leu Gly Leu Gln Ala 90

<210> 1865 <211> 125 <212> PRT <213> Homo sapiens

<400> 1865 Met Arg Leu Gly Leu Leu Leu Ala Arg His Trp Cys Ile Ala Gly 5 Val Phe Pro Gln Lys Phe Asp Gly Asp Ser Ala Tyr Val Gly Met Ser 20 25 Asp Gly Asn Pro Glu Leu Leu Ser Thr Ser Gln Thr Tyr Asn Gly Gln 40 Ser Glu Asn Asn Glu Asp Tyr Glu Ile Pro Pro Ile Thr Pro Pro Asn 55 Leu Pro Glu Pro Ser Leu Leu His Leu Gly Asp His Glu Ala Ser Tyr 70 75 His Ser Leu Cys His Gly Leu Thr Pro Asn Gly Leu Leu Pro Ala Tyr 85 90 Ser Tyr Gln Ala Met Asp Leu Pro Ala Ile Met Val Ser Asn Met Leu 105 Ala Gln Asp Ser His Leu Leu Ser Gly Gln Leu Pro Thr

<210> 1866 <211> 129 <212> PRT <213> Homo sapiens

<400> 1866 Met Cys Phe Leu Asn Lys Leu Leu Leu Leu Ala Ala Leu Asp Trp Leu 5 10 Phe Gln Ile Pro Thr Val Pro Glu Asp Leu Phe Phe Leu Glu Glu Gly 25 Pro Ser Tyr Ala Phe Glu Val Asp Thr Val Ala Pro Glu His Gly Leu Asp Asn Ala Pro Val Val Asp Gln Gln Leu Leu Tyr Thr Cys Cys Pro 55 Tyr Ile Gly Glu Leu Arg Lys Leu Leu Ala Ser Trp Val Ser Gly Ser 70 75 Ser Gly Arg Ser Gly Gly Phe Met Arg Lys Ile Thr Pro Thr Thr 85 90 Thr Ser Leu Gly Ala Gln Pro Ser Gln Thr Ser Gln Gly Leu Gln Ala 105 Gln Leu Ala Gln Ala Phe Phe His Asn Gln Pro Pro Ser Leu Arg Arg 120 Thr

<210> 1867 <211> 80 <212> PRT <213> Homo sapiens

<400> 1867

 Met
 Met
 Arg
 Leu
 Glu
 Lys
 Phe
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 Thr
 Trp
 Ser
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 Met
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 Leu
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 Gly
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 Leu
 Trp
 Ser
 Lys
 Ser

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 Phe
 Val
 Phe
 Arg
 Gln
 Gln
 Asn
 Cys
 Trp
 Ala
 Leu
 Trp
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<210> 1868 <211> 113 <212> PRT <213> Homo sapiens

<400> 1868 Met Leu Val Trp Leu Tyr Gly Thr Ile Arg Trp Pro Ala Leu Gly Ala 10 Pro Arg Trp Trp Pro Trp Val Trp Pro Pro Gly Val Trp Ser Gly Ile 25 Glu Thr Pro Ser Ser Thr Pro Arg Ala Arg Ser Leu Arg Gly Thr Gly 40 Gly Ala Val Thr Arg Arg Thr Gly Ser Ser Phe Pro Trp Thr Thr 55 60 Thr Arg Pro Ser Ser Trp Trp Thr Thr Ala His Thr Ala Ala Trp Gly 70 75 Ala Arg Thr Ala Ser Ala Cys Ala Trp Ser Pro Thr Ser His Ser Lys 90 Thr Arg Pro Trp Gln Gly Leu Glu Leu Thr Ser Leu Ala Cys Ser Ser 100 105

<210> 1869 <211> 72 <212> PRT <213> Homo sapiens

 Ser Asp Ser Ser Thr
 Ile Leu Cys Ser Arg Asp Leu Ile Leu Glu Ser 25
 30

 Ile Ala Leu Ile Ile Ala Phe Cys Ser Leu Arg Ile Leu Pro Phe Ser 35
 40

 Trp Ala Ser Ser Ser Cys Leu Cys Ile Met Phe Ser Ser Val Ser Leu 50
 55

 Ser Ala Arg Ser Phe Phe Ile \*
 65

<210> 1870 <211> 197 <212> PRT <213> Homo sapiens

<400> 1870 Met Arg Thr Leu Leu Thr Ile Leu Thr Val Gly Ser Leu Ala Ala His 10 Ala Pro Glu Asp Pro Ser Asp Leu Leu Gln His Val Lys Phe Gln Ser 20 25 Ser Asn Phe Glu Asn Ile Leu Thr Trp Asp Ser Gly Pro Glu Gly Thr 35 4.0 Pro Asp Thr Val Tyr Ser Ile Glu Tyr Lys Thr Tyr Gly Glu Arg Asp 55 Trp Val Ala Lys Lys Gly Cys Gln Arg Ile Thr Arg Lys Ser Cys Asn 70 75 Leu Thr Val Glu Thr Gly Asn Leu Thr Glu Leu Tyr Tyr Ala Arg Val 85 90 Thr Ala Val Ser Ala Gly Gly Arg Ser Ala Thr Lys Met Thr Asp Arg 105 Phe Ser Ser Leu Gln His Thr Thr Leu Lys Pro Pro Asp Val Thr Cys 120 125 Ile Ser Lys Val Arg Ser Ile Gln Met Ile Val His Pro Thr Pro Thr 135 140 Pro Ile Arg Ala Gly Asp Gly His Arg Leu Thr Leu Glu Asp Ile Phe 150 155 His Asp Leu Phe Tyr His Leu Glu Leu Gln Val Asn Arg Thr Tyr Gln 165 170 175 Met Val Ser Val Cys Cys Thr Leu Val Phe Leu Cys Leu Gly Ser Leu 180 185 Phe Pro Pro Asn \* 195 196

<210> 1871 <211> 75 <212> PRT <213> Homo sapiens

35 40 45
Arg Glu Ser Arg Ala Cys Ala Pro Gly Glu Arg Pro Asn Phe Leu Gly
50 55 60
Ile Arg Glu Gln Arg Leu Thr Gly Leu Val Val
65 70 75

<210> 1872 <211> 84 <212> PRT <213> Homo sapiens

(2237 220.... 04.202

<400> 1872 Met Pro Phe Ser Thr Cys Thr Ala Leu Pro Ser Trp Ala Thr Leu Ser 5 10 Thr Trp Ser Trp Thr Pro Lys Val Ser Leu Ala Gly Glu Glu Arg Gly 25 Glu Thr Cys Gln Pro Asp Pro Phe Pro Pro His Pro Ser Cys Ser Val 35 40 Gly Arg Thr Pro Pro His Ser Ser Leu Gly Ser Pro Pro Thr Thr Leu 55 60 Phe Leu Ser Pro Leu Leu Arg Val Glu Ser Arg Gly Ala Lys Cys Val 70 Val Cys Cys 83

<210> 1873 <211> 51 <212> PRT <213> Homo sapiens

<210> 1874 <211> 503 <212> PRT <213> Homo sapiens

Glu Trp Met Leu Gln His Asp Leu Ile Pro Gly Asp Leu Arg Asp Leu 40 Arg Val Glu Pro Val Thr Thr Ser Val Ala Thr Gly Asp Tyr Ser Ile 55 Leu Met Asn Val Ser Trp Val Leu Arg Ala Asp Ala Ser Ile Arg Leu Leu Lys Ala Thr Lys Ile Cys Val Thr Gly Lys Ser Asn Phe Gln Ser 90 Tyr Ser Cys Val Arg Cys Asn Tyr Thr Glu Ala Phe Gln Thr Gln Thr 105 Arg Pro Ser Gly Gly Lys Trp Thr Phe Ser Tyr Ile Gly Phe Pro Val 120 125 Glu Leu Asn Thr Val Tyr Phe Ile Gly Ala His Asn Ile Pro Asn Ala 135 Asn Met Asn Glu Asp Gly Pro Ser Met Ser Val Asn Phe Thr Ser Pro 150 155 Gly Cys Leu Asp His Ile Met Lys Tyr Lys Lys Cys Val Lys Ala 165 170 Gly Ser Leu Trp Asp Pro Asn Ile Thr Ala Cys Lys Lys Asn Glu Glu 185 Thr Val Glu Val Asn Phe Thr Thr Thr Pro Leu Gly Asn Arg Tyr Met 200 Ala Leu Ile Gln His Ser Thr Ile Ile Gly Phe Ser Gln Val Phe Glu 215 220 Pro His Gln Lys Lys Gln Thr Arg Ala Ser Val Val Ile Pro Val Thr 230 235 Gly Asp Ser Glu Gly Ala Thr Val Gln Leu Thr Pro Tyr Phe Pro Thr 245 250 Cys Gly Ser Asp Cys Ile Arg His Lys Gly Thr Val Val Leu Cys Pro 265 Gln Thr Gly Val Pro Phe Pro Leu Asp Asn Asn Lys Ser Lys Pro Gly 280 Gly Trp Leu Pro Leu Leu Leu Ser Leu Leu Val Ala Thr Trp Val 295 300 Leu Val Ala Gly Ile Tyr Leu Met Trp Arg His Glu Arg Ile Lys Lys 310 315 Thr Ser Phe Ser Thr Thr Thr Leu Leu Pro Pro Ile Lys Val Leu Val 325 330 Val Tyr Pro Ser Glu Ile Cys Phe His His Thr Ile Cys Tyr Phe Thr 340 345 Glu Phe Leu Gln Asn His Cys Arg Ser Glu Val Ile Leu Glu Lys Trp 360 Gln Lys Lys Lys Ile Ala Glu Met Gly Pro Val Gln Trp Leu Ala Thr 380 Gln Lys Lys Ala Ala Asp Lys Val Val Phe Leu Leu Ser Asn Asp Val 390 395 Asn Ser Val Cys Asp Gly Thr Cys Gly Lys Ser Glu Gly Ser Pro Ser 405 410 Glu Asn Ser Gln Asp Leu Phe Pro Leu Ala Phe Asn Leu Phe Cys Ser 420 425 Asp Leu Arg Ser Gln Ile His Leu His Lys Tyr Val Val Val Tyr Phe 440 Arg Glu Ile Asp Thr Lys Asp Asp Tyr Asn Ala Leu Ser Val Cys Pro 455 460 Lys Tyr His Leu Met Lys Asp Ala Thr Ala Phe Cys Ala Glu Leu Leu 470 475 His Val Lys Gln Gln Val Ser Ala Gly Lys Arg Ser Gln Ala Cys His 485 490 Asp Gly Cys Cys Ser Leu \*

500 502

<210> 1875 <211> 158 <212> PRT <213> Homo sapiens <221> misc\_feature

<222> (1)...(158)
<223> Xaa = any amino acid or nothing

<400> 1875 Met Xaa Pro Pro Thr Arg Pro Arg Thr Arg Gly Val Gly Ile Phe Tyr 5 10 Phe Val Ile Tyr Ile Ile Ile Ser Phe Leu Val Val Asn Met Tyr 20 25 Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Thr 40 Glu Pro Leu Ser Glu Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu 55 60 Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu Phe Ser Lys Leu Ser 70 75 Asp Phe Ala Ala Ala Leu Asp Pro Pro Leu Leu Ile Ala Lys Pro Asn 85 90 Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg 100 105 110 Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly 115 · 120 125 Glu Ser Gly Glu Met Asp Ser Leu Arg Ser Gln Met Glu Glu Arg Phe 135 140 Met Ser Ala Asn Pro Ser Lys Val Ser Tyr Glu Pro Ile Thr <sub>~</sub> 150 155

<210> 1876 <211> 106 <212> PRT <213> Homo sapiens

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<222> (1)...(241)
     <223> Xaa = any amino acid or nothing
     <400> 1877
Met Leu Trp Ala Leu Trp Pro Arg Trp Leu Ala Asp Lys Met Leu Pro
Leu Leu Gly Ala Val Leu Leu Gln Lys Arg Glu Lys Arg Gly Pro Leu
            20
                                25
Trp Arg His Trp Arg Arg Glu Thr Tyr Pro Tyr Tyr Asp Leu Gln Val
                           40
Lys Val Leu Arg Ala Thr Asn Ile Arg Gly Thr Asp Leu Leu Ser Lys
Ala Asp Cys Tyr Val Gln Leu Trp Leu Pro Thr Ala Ser Pro Ser Pro
                                      75
                   70
Ala Gln Thr Arg Ile Val Ala Asn Cys Ser Asp Pro Glu Trp Asn Glu
               85
                                   90 95
Thr Phe His Tyr Gln Ile His Gly Ala Val Lys Asn Val Leu Glu Leu
                               105
           100
Thr Leu Tyr Asp Lys Asp Ile Leu Gly Ser Asp Gln Leu Ser Leu Leu
       115
                           120
Leu Phe Asp Leu Arg Ser Leu Lys Cys Gly Gln Pro His Lys His Thr
                       135
                                          140
Phe Pro Leu Asn His Gln Asp Ser Gln Glu Leu Gln Val Glu Phe Val
                                      155
                   150
Leu Glu Lys Ser Gln Glu Pro Ala Ser Glu Val Ile Thr Asn Gly Val
                                   170
Leu Gly Ala His Pro Trp Leu Arg Met Lys Gly Met Ile Leu Gly Glu
                              185
Gly Arg Ala Pro Arg Gln Gln His Gly Gln Ser Trp Glu Gly Gly Val
                          200
                                              205
Gly Pro Ser Pro Leu Ser Xaa Xaa Xaa Asn Thr Gly Gly Lys Ile Val
                      215
                                         220
Gly Phe Trp Glu Glu Met Ala Asn Gly Thr Gly Ala Pro Pro Arg Pro
225
                   230
Pro
241
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<400> 1878

<210> 1878 <211> 50 <212> PRT

<213> Homo sapiens

<210> 1877 <211> 241 <212> PRT

<213> Homo sapiens

<221> misc\_feature

Met Leu Leu Met Leu Leu Phe Arg Cys Cys Ser Ser Lys Asp Leu Trp

1 5 10 15

Pro Val Leu Ile Ala His Leu Val Pro Gln Gly Gly Gln Glu Gly Asn

```
20 25 30

Val Gly Glu Gln Thr Lys Gly Lys Ser Asn Arg Val Leu Pro Val Phe
35 40 45

Leu *
49
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<210> 1879 <211> 56 <212> PRT <213> Homo sapiens

<400> 1879

<210> 1880 <211> 161 <212> PRT <213> Homo sapiens <221> misc\_feature <222> (1)...(161) <223> Xaa = any amino acid or nothing

<400> 1880 Met Pro Ser Ala Ser Leu Leu Val Asn Leu Leu Ser Ala Leu Leu Ile 10 Leu Phe Val Phe Gly Glu Thr Glu Ile Arg Phe Thr Gly Gln Thr Glu 20 25 Phe Val Val Asn Glu Thr Ser Thr Thr Val Ile Arg Leu Ile Ile Glu 35 40 Arg Ile Gly Glu Pro Ala Asn Val Thr Ala Ile Val Ser Leu Tyr Gly 55 Glu Asp Ala Gly Asp Phe Phe Asp Thr Tyr Ala Ala Ala Phe Ile Pro 70 Ala Gly Glu Thr Asn Arg Thr Val Tyr Ile Ala Val Cys Asp Asp Asp 85 90 Leu Pro Glu Pro Asp Glu Thr Phe Ile Phe His Leu Thr Leu Gln Lys 100 105 Pro Ser Ala Asn Val Lys Leu Gly Trp Pro Arg Thr Val Thr 120 125 Ile Leu Ser Asn Gly Gln Met Ala Phe Trp Glu Phe Ile Phe Ile Leu 135 140 Asn Ile Gly Leu Pro Pro Pro Ile Pro Pro Ser Gly Xaa Leu Lys Ala 155 · Pro 161

<210> 1881 <211> 130 <212> PRT <213> Homo sapiens

<400> 1881 Met Gly Ile Tyr Gln Met Tyr Leu Cys Phe Leu Leu Ala Val Leu Leu 10 Gln Leu Tyr Val Ala Thr Glu Ala Ile Leu Ile Ala Leu Val Gly Ala 20 25 Thr Pro Ser Tyr His Trp Asp Leu Ala Glu Leu Leu Pro Asn Gln Ser 40 His Gly Asn Gln Ser Ala Gly Glu Asp Gln Ala Phe Gly Asp Trp Leu Leu Thr Ala Asn Gly Ser Glu Ile His Lys His Val His Phe Ser Ser 70 Ser Phe Thr Ser Ile Ala Ser Glu Trp Phe Leu Ile Ala Asn Arg Ser 90 85 Tyr Lys Val Ser Ala Ala Ser Ser Phe Phe Phe Ser Gly Val Phe Val . 105 Gly Val Ile Ser Phe Gly Gln Leu Ser Asp Arg Phe Gly Arg Lys Lys Val Tyr 130

<210> 1882 <211> 108 <212> PRT <213> Homo sapiens

<400> 1882 Met Leu Trp Phe Ser Gly Val Gly Ala Leu Ala Glu Arg Tyr Cys Arg 5 Arg Ser Pro Gly Ile Thr Cys Cys Val Leu Leu Leu Leu Asn Cys Ser 20 25 Gly Val Pro Met Ser Leu Ala Ser Ser Phe Leu Thr Gly Ser Val Ala 35 40 45 Lys Cys Glu Asn Glu Gly Glu Val Leu Gln Ile Pro Phe Ile Thr Asp 55 Asn Pro Cys Ile Met Cys Val Cys Leu Asn Lys Glu Val Thr Cys Lys Arg Glu Lys Cys Pro Val Leu Ser Arg Asp Cys Ala Leu Ala Ile Lys 85 90 Gln Arg Gly Ala Cys Cys Glu Gln Cys Lys Gly Cys 100 105

<210> 1883 <211> 88 <212> PRT <213> Homo sapiens

<210> 1884 <211> 116 <212> PRT <213> Homo sapiens

<400> 1884 Met Cys Trp Ala Arg Cys Trp Thr Arg Trp Asn Thr Cys Thr Ile Trp 10 Thr Ser Ser Thr Asp Pro Phe Arg Lys Cys Trp Met Ala Pro Glu Ala 25 20 Leu Asn Phe Ser Phe Ser His Lys Ser Asp Ile Trp Ser Leu Gly Cys 40 Ile Ile Leu Asp Met Thr Ser Cys Ser Phe Met Asp Gly Thr Glu Ala 55 60 Met His Leu Arg Lys Ser Leu Arg Gln Ser Pro Gly Ser Leu Lys Ala 70 75 Val Leu Lys Thr Met Glu Glu Lys Gln Ile Pro Asp Val Glu Thr Phe 85 90 Arg Asn Leu Leu Pro Leu Met Leu Gln Ile Asp Pro Ser Asp Arg Ile 105 Thr Ile Lys \*

<210> 1885 <211> 115 <212> PRT <213> Homo sapiens

<400> 1885

115

 Met Ser Glu Arg Val Glu Arg Asn Trp Ser Thr Gly Gly Trp Leu Leu

 1
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 10
 15

 Ala Leu Cys Leu Ala Trp Leu Trp Thr His Leu Thr Leu Ala Ala Leu
 20
 25
 30

 Gln Pro Pro Thr Ala Thr Val Leu Val Gln Gln Gly Thr Cys Glu Val
 35
 40
 45

 Ile Ala Ala His Arg Cys Cys Asn Arg Asn Arg Ile Glu Glu Arg Ser
 50
 60

<210> 1886 <211> 357 <212> PRT <213> Homo sapiens

<400> 1886 Met Ile Leu Ser Leu Leu Phe Ser Leu Gly Gly Pro Leu Gly Trp Gly 10 Leu Leu Gly Ala Trp Ala Gln Ala Ser Ser Thr Ser Leu Ser Asp Leu 20 Gln Ser Ser Arg Thr Pro Gly Val Trp Lys Ala Glu Ala Glu Asp Thr 35, 40 Gly Lys Asp Pro Val Gly Arg Asn Trp Cys Pro Tyr Pro Met Ser Lys 55 Leu Val Thr Leu Leu Ala Leu Cys Lys Thr Glu Lys Phe Leu Ile His 75 Ser Gln Gln Pro Cys Pro Gln Gly Ala Pro Asp Cys Gln Lys Val Lys 85 Val Met Tyr Arg Met Ala His Lys Pro Val Tyr Gln Val Lys Gln Lys 100 105 Val Leu Thr Ser Leu Ala Trp Arg Cys Cys Pro Gly Tyr Thr Gly Pro 120 125 Asn Cys Glu His His Asp Ser Met Ala Ile Pro Glu Pro Ala Asp Pro 135 140 Gly Asp Ser His Gln Glu Pro Gln Asp Gly Pro Val Ser Phe Lys Pro 150 Gly His Leu Ala Ala Val Ile Asn Glu Val Glu Val Gln Gln Glu Gln 165 170 Gln Glu His Leu Leu Gly Asp Leu Gln Asn Asp Val His Arg Val Ala 180 185 Asp Ser Leu Pro Gly Leu Trp Lys Ala Leu Pro Gly Asn Leu Thr Ala 195 200 205 Ala Val Met Glu Ala Asn Gln Thr Gly His Glu Phe Pro Asp Arg Ser 215 220 Leu Glu Gln Val Leu Leu Pro His Val Asp Thr Phe Leu Gln Val His 230 235 Phe Ser Pro Ile Trp Arg Ser Phe Asn Gln Ser Leu His Ser Leu Thr 245 250 255 Gln Ala Ile Arg Asn Leu Ser Leu Asp Val Glu Ala Asn Arg Gln Ala 265 270 Ile Ser Arg Val Gln Asp Ser Ala Val Ala Arg Ala Asp Phe Gln Glu 280 285 Leu Gly Ala Lys Phe Glu Ala Lys Val Gln Glu Asn Thr Gln Arg Val 295 Gly Gln Leu Arg Gln Asp Val Glu Asp Arg Leu His Ala Gln His Phe 310 315 Thr Leu His Arg Ser Ile Ser Glu Leu Gln Ala Asp Val Asp Thr Lys

 Leu Lys
 Arg
 Leu His Lys
 Ala Gln
 Glu
 Ala Pro Gly
 Thr
 Asn
 Gly
 Ser

 Leu Val
 Leu Glu
 Arg
 345
 345
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 350
 350

 Leu Val
 Leu 355
 357
 357
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 350
 350

<210> 1887 <211> 86 <212> PRT

<213> Homo sapiens

<210> 1888 <211> 48 <212> PRT <213> Homo sapiens

> <210> 1889 <211> 79 <212> PRT <213> Homo sapiens

Asn Gln Thr Phe Leu Cys Leu Leu Ser Thr Thr Ala Phe Gly Gln Gly 50 55 60

Val Phe Phe Ile Thr Phe Leu Glu Gly Gln Glu Thr Gly Ile His 65 70 75 79

<210> 1890 <211> 251 <212> PRT <213> Homo sapiens

<400> 1890 Met Asn Val Ile Tyr Phe Pro Leu His Leu Phe Val Val Tyr Ser Arg 5 10 Ala Tyr Thr Ser Leu Val Leu Val Gly Cys Thr Asn Leu Cys Ala Val 20<sub>.</sub> 25 Leu Phe Ala Arg Cys Leu Asp Asp His Leu Val Ser Leu Arg Met Ser 40 Gly Ser Arg Lys Glu Phe Asp Val Lys Gln Ile Leu Lys Ile Arg Trp 55 Arg Trp Phe Gly His Gln Ala Ser Ser Pro Asn Ser Thr Val Asp Ser 75 70 Gln Gln Gly Glu Phe Trp Asn Arg Gly Gln Thr Gly Ala Asn Gly Gly 85 90 Arg Lys Phe Leu Asp Pro Cys Ser Leu Gln Leu Pro Leu Ala Ser Ile 100 105 Gly Tyr Arg Arg Ser Ser Gln Leu Asp Phe Gln Asn Ser Pro Ser Trp 115 120 Pro Met Ala Ser Thr Ser Glu Val Pro Ala Phe Glu Phe Thr Ala Glu 130 135 140 Asp Cys Gly Gly Ala His Trp Leu Asp Arg Pro Glu Val Asp Asp Gly 155 150 145 Thr Ser Glu Glu Glu Asn Glu Ser Asp Ser Ser Ser Cys Arg Thr Ser 170 165 Asn Ser Ser Gln Thr Leu Ser Ser Cys His Thr Met Glu Pro Cys Thr 185 190 Ser Asp Glu Phe Phe Gln Ala Leu Asn His Ala Glu Gln Thr Phe Lys 195 200 205 Lys Met Glu Asn Tyr Leu Arg His Lys Gln Leu Cys Asp Val Ile Leu 215 220 Val Ala Gly Asp Arg Arg Ile Pro Ala His Arg Leu Val Leu Ser Ser 230 235 Val Ser Asp Tyr Phe Ala Gly Met Phe Thr Asn 245 250 251

<210> 1891
<211> 117
<212> PRT
<213> Homo sapiens
<221> misc\_feature
<222> (1) ... (117)

<223> Xaa = any amino acid or nothing

<400> 1891 Met Leu Ile Asp Val Phe Phe Leu Phe Leu Phe Ala Xaa Trp Met 10 Val Ala Phe Gly Val Ala Arg Gln Gly Ile Leu Arg Gln Asn Glu Gln 20 25 Arg Trp Arg Trp Ile Phe Arg Ser Val Ile Tyr Glu Pro Tyr Leu Ala 40 Met Phe Gly Gln Val Pro Ser Asp Val Asp Gly Thr Thr Tyr Asp Phe 55 Ala His Cys Thr Phe Thr Gly Asn Glu Ser Lys Pro Leu Cys Val Glu 70 Leu Asp Glu His Asn Leu Pro Arg Phe Pro Glu Trp Ile Thr Ile Pro 85 90 Leu Val Cys Ile Tyr Met Leu Ser Thr Asn Ile Leu Leu Val Asn Leu 105 Leu Val Ala Met Phe 115

<210> 1892 <211> 103 <212> PRT <213> Homo sapiens

<400> 1892

Met Leu Cys His Pro His Val His His Leu Val Cys Leu Leu Ala 5 10 Thr Leu Thr Phe Ser Leu Asn Ala Ser Cys Ala Glu Gln Thr Phe His 25 Ser Gln Gln Ser Asn Gly Glu Phe Met Ala Thr Leu Pro Ser Ile Ser 40 Lys Gln Phe Gly Val Ile Val Trp Lys Pro Gln Arg Lys Asp Val Ile 55 60 Arg Leu Pro Val Ala Leu Ser Phe Ser Ser Gly Ala Arg Leu Ala Phe 70 75 Thr Cys Leu Arg Lys Ile Ser Gly Phe Arg Ala Leu Ile Trp Gly Glu Asp Lys Gly Trp Asp Leu 100 102

<210> 1893 <211> 77 <212> PRT <213> Homo sapiens <221> misc\_feature <222> (1)...(77) <223> Xaa = any amino acid or nothing

Ala Leu Val Phe Leu Leu Leu Val Gly Leu Leu Asn Ala Arg Gly Ile
35
Lys Glu Ser Met Arg Ala Xaa Val Val Met Thr Val Val Glu Val Thr
50
Gly Leu Val Leu Val Val Val Leu Ala Leu Val Pro Gly
65
70
77

<210> 1894 <211> 46 <212> PRT <213> Homo sapiens

<210> 1895 <211> 162 <212> PRT <213> Homo sapiens

<400> 1895 Met Thr Ala Trp Arg Phe Gln Ser Leu Leu Leu Leu Gly Leu 5 10 Leu Val Leu Cys Ala Arg Leu Leu Thr Ala Ala Lys Gly Gln Asn Cys 20 25 Gly Gly Leu Val Gln Gly Pro Asn Gly Thr Ile Glu Ser Pro Gly Phe 40 Pro His Gly Tyr Pro Asn Tyr Ala Asn Cys Thr Trp Ile Ile Ile Thr 55 60 Gly Glu Arg Asn Arg Ile Gln Leu Ser Phe His Thr Phe Ala Leu Glu 70 75 Glu Asp Phe Asp Ile Leu Ser Val Tyr Asp Gly Gln Pro Gln Gln Gly 85 90 Asn Leu Lys Val Arg Leu Ser Gly Phe Gln Leu Pro Ser Ser Ile Val 100 105 Ser Thr Gly Ser Ile Leu Thr Leu Trp Phe Thr Thr Asp Phe Ala Val 115 120 125 Ser Ala Gln Gly Phe Lys Ala Leu Tyr Glu Gly Arg Arg Leu Val Val 135 140 Phe Cys Thr Cys Ile His Cys Pro Asn Asp Leu Ile His Ala Thr Leu 145 150 155 Asp \* 161

<210> 1896 <211> 60

<212> PRT <213> Homo sapiens

55

<210> 1897 <211> 49 <212> PRT <213> Homo sapiens

<210> 1898 <211> 52 <212> PRT <213> Homo sapiens

<210> 1899 <211> 112 <212> PRT <213> Homo sapiens

<400> 1899

Met Ala Ile Pro Ser Val Val Ile Ser Gly Leu Ala Val Leu Leu Val 5 10 Ala Met Ala Leu Pro Ser Leu Ser Gly Ser Glu Ala Ile Lys Ser Met . 25 Thr Ile Pro Gly Leu Val Val Pro Thr Val Val Arg Phe Met Ala Val 40 Pro Gly Leu Ile Val Pro Ala Val Ala Lys Phe Thr Val Leu Pro Asp 55 60 Leu Thr Val Pro Thr Glu Asp Lys Ser Leu Ala Val Pro Ser Leu Ile 70 75 Ser Arg Ala Gly Asn Ser Val Pro Val Ser Ser Trp Asp Val Phe Gly 85 90 Val Ala Lys Leu Ile Ala Lys Leu Gly Leu Leu Ala Ala Ile Val Ala 105

<210> 1900 <211> 128 <212> PRT <213> Homo sapiens

<400> 1900 Met Arg Val Tyr Gly Thr Cys Thr Leu Val Leu Met Ala Leu Val Val 10 Phe Val Gly Val Lys Tyr Val Asn Lys Leu Ala Leu Val Phe Leu Ala 20 25 Cys Val Val Leu Ser Ile Leu Ala Ile Tyr Ala Gly Val Ile Lys Ser 40 Ala Phe Asp Pro Pro Asp Ile Pro Val Cys Leu Leu Gly Asn Arg Thr Leu Ser Arg Arg Ser Phe Asp Ala Cys Val Lys Ala Tyr Gly Ile His 75 70 Asn Asn Ser Ala Thr Ser Ala Leu Trp Gly Leu Phe Cys Asn Gly Ser 90 Gln Pro Ser Ala Ala Cys Asp Glu Tyr Phe Ile Gln Asn Asn Val Thr 105 Glu Ile Gln Gly Ile Pro Gly Ala Ala Ser Gly Val Phe Leu Glu Asn

<210> 1901 <211> 68 <212> PRT <213> Homo sapiens

<400> 1901 Glu Leu Leu

Met Glu Leu Leu Lys Leu Leu Leu Thr Cys Phe Ser Glu Ala Met Tyr 1 5 10 15 Leu Pro Pro Ala Pro Glu Ser Gly Ser Thr Asn Pro Trp Val Gln Phe 20 25 30 Phe Cys Ser Thr Glu Asn Arg His Ala Leu Pro Leu Phe Thr Ser Leu

35 40 45

Leu Asn Thr Val Cys Ala Tyr Asp Pro Val Glu Tyr Gly Ile Pro Tyr
50 55 60

Asn His Leu Tyr
65 68

<210> 1902 <211> 127 <212> PRT <213> Homo sapiens

<400> 1902 Met Tyr Phe Ser Ser Leu Phe Pro Tyr Val Val Leu Ala Cys Phe Leu 10 5 Val Arg Gly Leu Leu Leu Arg Gly Ala Val Asp Gly Ile Leu His Met 25 20 Phe Thr Pro Lys Leu Asp Lys Met Leu Asp Pro Gln Val Trp Arg Glu 40 Ala Ala Thr Gln Val Phe Ser Ala Leu Gly Leu Gly Phe Gly Gly Val 60 55 Ile Ala Phe Ser Ser Tyr Asn Lys Gln Asp Asn Asn Cys His Phe Asp 75 70 Ala Ala Leu Val Ser Phe Ile Asn Phe Phe Thr Ser Val Leu Ala Thr 90 85 Leu Val Val Phe Ala Val Leu Gly Phe Lys Ala Asn Ile Met Asn Glu 110 105 Lys Cys Val Val Glu Asn Ala Glu Lys Ile Leu Gly Tyr Arg Val 115 120

<210> 1903 <211> 83 <212> PRT <213> Homo sapiens

<210> 1904 <211> 129 <212> PRT

## <213> Homo sapiens

<400> 1904 Met Lys Met Phe Val Ala His Gly Phe Tyr Ala Ala Lys Phe Val Val 10 Ala Ile Gly Ser Val Ala Gly Leu Thr Val Ser Leu Leu Gly Ser Leu 25 Phe Pro Met Pro Arg Val Ile Tyr Ala Met Ala Gly Asp Gly Leu Leu 40 Phe Arg Phe Leu Ala His Val Ser Ser Tyr Thr Glu Thr Pro Val Val 55 60 Ala Cys Ile Val Ser Gly Phe Leu Ala Ala Leu Leu Ala Leu Leu Val 70 75 Ser Leu Arg Asp Leu Ile Glu Met Met Ser Ile Gly Thr Leu Leu Ala 90 85 Tyr Thr Leu Val Ser Val Cys Val Leu Leu Leu Arg His His Pro Glu 105 100 Ser Asp Ile Asp Gly Phe Val Lys Phe Leu Ser Glu Glu His Thr Cys 120 125 Ser 129

<210> 1905 <211> 93 <212> PRT <213> Homo sapiens

<400> 1905 Met Gly Leu Leu Met Met Ile Leu Gly Gln Ile Phe Leu Asn Gly Asn 5 10 1.5 Gln Ala Lys Glu Ala Glu Ile Trp Glu Met Leu Trp Arg Met Gly Val . 25 Gln Arg Glu Arg Arg Leu Ser Ile Phe Gly Asn Pro Lys Arg Leu Leu 45 35 40 Ser Val Glu Phe Val Trp Gln Arg Tyr Leu Asp Tyr Arg Pro Val Thr 55 60 Asp Cys Lys Pro Val Glu Tyr Glu Phe Phe Trp Gly Pro Arg Ser His 70 75 Leu Glu Thr Thr Lys Met Lys Ile Leu Lys Phe Met Ala 85 90

<210> 1906 <211> 66 <212> PRT <213> Homo sapiens

35 40 45
Leu Ala Ser Gln His Ile Val Arg Thr Asp Leu His Val Gln Gly Pro
50 55 60
Cys Ile
65 66

<210> 1907 <211> 105 <212> PRT <213> Homo sapiens

<400> 1907 Met Leu Gln Leu Gly Pro Phe Leu Tyr Trp Thr Phe Leu Ala Ala Phe 1.0 Glu Gly Thr Val Phe Phe Phe Gly Thr Tyr Phe Leu Phe Gln Thr Ala 20 25 Ser Leu Glu Glu Asn Gly Lys Val Tyr Gly Asn Trp Thr Phe Gly Thr 40 Ile Val Phe Thr Val Leu Val Phe Thr Val Thr Leu Lys Leu Ala Leu 55 60 Asp Thr Arg Phe Trp Thr Trp Ile Asn His Phe Val Ile Trp Gly Ser 70 75 Leu Ala Phe Tyr Val Phe Phe Ser Phe Phe Trp Gly Gly Ile Ile Trp 85 Pro Phe Leu Lys Gln Gln Arg Met Ala 100

<210> 1908 <211> 46 <212> PRT <213> Homo sapiens

<210> 1909 <211> 139 <212> PRT <213> Homo sapiens

Asp Asp Arg Trp Ile Asn Asp Val Glu Asp Ser Tyr Gly Gln Gln Trp 40 Thr Tyr Glu Gln Arg Lys Ile Val Glu Phe Thr Cys His Thr Ala Phe 55 Phe Val Ser Ile Val Gly Val Gln Trp Ala Asp Leu Val Ile Cys Lys 70 75 Thr Arg Arg Asn Ser Val Phe Gln Pro Gly Met Lys Asn Lys Ile Leu 85 90 Ile Phe Gly Leu Phe Glu Glu Thr Ala Leu Ala Ala Phe Leu Ser Tyr 100 105 Cys Pro Gly Met Gly Val Ala Leu Lys Met Tyr Pro Leu Lys Pro Thr 120 115 Trp Arg Val Cys Ala Phe Pro Tyr Ser Leu Leu 135

<210> 1910 <211> 104 <212> PRT <213> Homo sapiens

<400> 1910 Met Glu Gly Trp Phe Ala Val Leu Ser Thr Ala Asn Asp Val Leu Gly 10 Ala Pro Trp Asn Trp Leu Tyr Phe Ile Pro Leu Leu Ile Ile Gly Ala 25 20 Phe Phe Val Pro Thr Leu Val Leu Gly Val Leu Ser Gly Asp Phe Ala 40 Lys Glu Arg Glu Arg Val Glu Thr Arg Arg Ala Phe Met Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu Leu Asn Gly Tyr Arg Val Trp Ile 75 Ala Lys Ala Glu Glu Val Met Leu Ala Glu Glu Asn Leu Tyr Pro Ser 85 His Ala Arg Pro Val Asn Pro \* 103 100

<210> 1911 <211> 116 <212> PRT <213> Homo sapiens

85 90 95
Pro Phe Ile Ser Arg Thr Lys Ile Ala Gln Leu Lys Ser Gly Arg Asp
100 105 110
Ser Thr Val \*
115

<210> 1912 <211> 105 <212> PRT <213> Homo sapiens

Table 110.... Dapidia

<400> 1912 Met Gln Leu Lys Thr Pro Ser Gly Gln Val Leu Ser Phe Cys Ile Leu 10 Gln Leu Phe Pro Phe Thr Ser Glu Ser Lys Arg Met Gly Val Ile Val 20 25 Arg Asp Glu Ser Thr Ala Glu Ile Thr Phe Tyr Met Lys Gly Ala Asp 40 Val Ala Met Ser Pro Ile Val Gln Tyr Asn Asp Trp Leu Glu Glu Glu 50 55 60 Cys Gly Asn Met Ala Arg Glu Gly Leu Arg Thr Leu Val Val Ala Lys 75 70 Lys Ala Leu Thr Glu Glu Gln Tyr Gln Asp Phe Glu Ser Arg Tyr Thr 85 Gln Ala Lys Leu Ser Met His Thr Lys 100 105

<210> 1913 <211> 141 <212> PRT <213> Homo sapiens

<400> 1913

Met Leu Val Tyr Val Trp Ser Arg Arg Ser Pro Arg Val Arg Val Asn 5 10 . Phe Phe Gly Leu Leu Thr Phe Gln Ala Pro Phe Leu Pro Trp Ala Leu 25 Met Gly Phe Ser Leu Leu Gly Asn Ser Ile Leu Val Asp Leu Leu 40 Gly Ile Ala Val Gly His Ile Tyr Tyr Phe Leu Glu Asp Val Phe Pro 55 Asn Gln Pro Gly Arg Gln Glu Ala Pro Ala Asp Pro Trp Ala Phe Leu 70 75 Lys Leu Leu Gly Cys Pro Cys Arg Arg Pro Gln Leu Thr Cys Pro 90 Ser Leu Arg Asn Ser Gln Asp Pro Ile Cys His Pro Arg Ser Ser Asp 105 Pro His Pro Gly Ala Arg Pro Lys Arg Leu Leu Ala Ala Ser Ile Leu 120 Pro Met Thr Pro Thr Trp Gly Arg Lys Asn Pro Ser \* 135

<210> 1914 <211> 556 <212> PRT <213> Homo sapiens

<400> 1914 Met Lys Lys Val Leu Leu Leu Leu Trp Lys Thr Val Leu Cys Thr Leu Gly Gly Phe Glu Glu Leu Gln Ser Met Lys Ala Glu Lys Arg Ser Ile Leu Gly Leu Pro Pro Leu Pro Glu Asp Ser Ile Lys Val Ile Arg Asn 40 Met Arg Ala Ala Ser Pro Pro Ala Ser Ala Ser Asp Leu Ile Glu Gln 55 Gln Gln Lys Arg Gly Arg Arg Glu His Lys Ala Leu Ile Lys Gln Asp 70 Asn Leu Asp Ala Phe Asn Glu Arg Asp Pro Tyr Lys Ala Asp Asp Ser 85 Arg Glu Glu Glu Glu Asn Asp Asp Asp Asn Ser Leu Glu Gly Glu 105 Thr Phe Pro Leu Glu Arg Asp Glu Val Met Pro Pro Pro Leu Gln His 115 120 Pro Gln Thr Asp Arg Leu Thr Cys Pro Lys Gly Leu Pro Trp Ala Pro 135 140 Lys Val Arg Glu Lys Asp Ile Glu Met Phe Leu Glu Ser Ser Arg Ser 150 155 Lys Phe Ile Gly Tyr Thr Leu Gly Ser Asp Thr Asn Thr Val Val Gly 170 Leu Pro Arg Pro Ile His Glu Ser Ile Lys Thr Leu Lys Gln His Lys 180 185 Tyr Thr Ser Ile Ala Glu Val Gln Ala Gln Met Glu Glu Glu Tyr Leu 200 Arg Ser Pro Leu Ser Gly Gly Glu Glu Glu Val Glu Gln Val Pro Ala 215 220 Glu Thr Leu Tyr Gln Gly Leu Leu Pro Ser Leu Pro Gln Tyr Met Ile 230 235 Ala Leu Leu Lys Ile Leu Leu Ala Ala Pro Thr Ser Lys Ala Lys 245 250 Thr Asp Ser Ile Asn Ile Leu Ala Asp Val Leu Pro Glu Glu Met Pro 260 265 Thr Thr Val Leu Gln Ser Met Lys Leu Gly Val Asp Val Asn Arg His 280 Lys Glu Val Ile Val Lys Ala Ile Ser Ala Val Leu Leu Leu Leu 295 Lys His Phe Lys Leu Asn His Val Tyr Gln Phe Glu Tyr Met Ala Gln 310 315 His Leu Val Phe Ala Asn Cys Ile Pro Leu Ile Leu Lys Phe Phe Asn 325 330 Gln Asn Ile Met Ser Tyr Ile Thr Ala Lys Asn Ser Ile Ser Val Leu 340 345 Asp Tyr Pro His Cys Val Val His Glu Leu Pro Glu Leu Thr Ala Glu 360 Ser Leu Glu Ala Gly Asp Ser Asn Gln Phe Cys Trp Arg Asn Leu Phe 375 380 Ser Cys Ile Asn Leu Leu Arg Ile Leu Asn Lys Leu Thr Lys Trp Lys 390 395 His Ser Arg Thr Met Met Leu Val Val Phe Lys Ser Ala Pro Ile Leu

405 410 Lys Arg Ala Leu Lys Val Lys Gln Ala Met Met Gln Leu Tyr Val Leu 420 425 Lys Leu Leu Lys Val Gln Thr Lys Tyr Leu Gly Arg Gln Trp Arg Lys 440 445 Ser Asn Met Lys Thr Met Ser Ala Ile Tyr Gln Lys Val Arg His Arg 455 460 Leu Asn Asp Asp Trp Ala Tyr Gly Asn Asp Leu Asp Ala Arg Pro Trp 470 475 Asp Phe Gln Ala Glu Glu Cys Ala Leu Arg Ala Asn Ile Glu Arg Phe 485 490 Asn Ala Arg Arg Tyr Asp Arg Ala His Ser Asn Pro Asp Phe Leu Pro 500 505 Val Asp Asn Cys Leu Gln Ser Val Leu Gly Gln Arg Val Asp Leu Pro 520 525 Glu Asp Phe Gln Met Asn Tyr Asp Leu Trp Leu Glu Arg Glu Val Phe 535 Ser Lys Pro Ile Ser Trp Glu Glu Leu Leu Gln \* 550

<210> 1915 <211> 212 <212> PRT

<213> Homo sapiens

<400> 1915 Met Phe Leu Val Ala Val Trp Trp Arg Phe Gly Ile Leu Ser Ile Cys 10 Met Leu Cys Val Gly Leu Val Leu Gly Phe Leu Ile Ser Ser Val Thr 20 25 Phe Phe Thr Pro Leu Gly Asn Leu Lys Ile Phe His Asp Asp Gly Val 40 Phe Trp Val Thr Phe Ser Cys Ile Ala Ile Leu Ile Pro Val Val Phe 55 Met Gly Cys Leu Arg Ile Leu Asn Ile Leu Thr Cys Gly Val Ile Gly 70 75 Ser Tyr Ser Val Val Leu Ala Ile Asp Ser Tyr Trp Ser Thr Ser Leu 85 90 Ser Tyr Ile Thr Leu Asn Val Leu Lys Arg Ala Leu Asn Lys Asp Phe 100 105 His Arg Ala Phe Thr Asn Val Pro Phe Gln Thr Asn Asp Phe Ile Ile 120 Leu Ala Val Trp Gly Met Leu Ala Val Ser Gly Ile Thr Leu Gln Ile 135 140 Arg Arg Glu Arg Gly Arg Pro Phe Phe Pro Pro His Pro Tyr Lys Leu 150 155 Trp Lys Gln Glu Arg Glu Arg Arg Val Thr Asn Ile Leu Asp Pro Ser 165 170 Tyr His Ile Pro Pro Leu Arg Glu Arg Leu Tyr Gly Arg Leu Thr Gln 185 Ile Lys Gly Leu Phe Gln Lys Glu Gln Pro Ala Gly Glu Arg Thr Pro 200

195 200 205 Leu Leu \* 210 211

<210> 1916 <211> 172 <212> PRT <213> Homo sapiens

<400> 1916 Met Cys Thr Pro Val Arg Val Ser Ile Val Cys Val Met Gly Ala Val 10 Gly Ala Val Trp Thr Ala Pro Leu Pro Leu Pro Trp Ala Pro Thr Pro 20 25 Ser Ile His Leu Arg Glu Glu Gly Ala Ala Phe Pro Phe Cys Gly Val Cys Val Leu Arg Pro Arg Arg Ser Lys Trp Arg Ser Trp Asp Val Asn 55 Leu Gly Pro Arg Arg Gly Leu Leu Gly Cys Gly Pro Cys Pro Ser 70 Gly Lys Pro Arg Val His Leu Gln Arg Thr Arg Ser Gly Ala Gly Ala Glu Ala Gly Gly Leu Pro Thr Arg Gly Ser Met Arg Gly Cys Pro Phe 105 Leu Gly Ser Ser Ala Ala Lys Cys Ser Leu Leu Arg Pro Pro Ser 115 120 125 Arg Gly Glu Ala Ser Pro Trp Leu Pro Glu Phe Met Thr His Pro Val 135 140 His His Gln Gln Leu Ala Cys Gly Ser Gly Trp Leu Gly Thr Lys His 150 155 Pro Gly Gly Thr Cys Ala Leu Gly Ser Thr Met 165

<210> 1917 <211> 72 <212> PRT <213> Homo sapiens

<210> 1918 <211> 88 <212> PRT <213> Homo sapiens

<400> 1918 Met Thr Ser Leu Met Phe Leu Trp Arg Ala Leu Leu Glu Thr Ile Ser 10 Thr Asn Met Thr Phe Ser Leu Pro Leu Ala Ala Val Val Arg Ala Trp 20 25 Met Lys Pro Thr Gly Ser Gly Met Phe Leu Tyr Gln Tyr Leu Pro Val 40 45 Val Lys Ser Ser Gln Ala Val Phe Pro Val Val Ile Glu Ile Ser Ser 55 Ile Ser Gly Ser Ile Leu Pro Lys Phe Pro Met Leu Ser Leu Met Ser 70 75 Leu His Thr Gly Ser Ile Ile \* 85

<210> 1919 <211> 54 <212> PRT <213> Homo sapiens

<210> 1920 <211> 114 <212> PRT <213> Homo sapiens

<400> 1920 Met His Pro Pro Leu Thr Pro Pro Thr Pro Leu Cys Leu Trp Leu Arg 5 10 Leu Leu Lys Ala Gln Ile Leu Ser Tyr Pro Val Pro Arg Phe Glu Thr 20 25 His Ser Leu Ile Ser Arg Cys Ser Gln Val Pro Pro Thr Phe Leu Trp 40 Asp Ile Lys Lys Gly Val Arg Gly Gln Arg Glu Pro Ser Gly Pro Leu Leu Pro Tyr Thr Leu His Cys Pro Phe Ser Pro His Gln Asn Ala Gln 70 Arg Arg Cys Asp Asp Ala Thr Glu Asp Tyr Ala Thr Trp Ser Asn Arg 85 . 90 Ser Gly Gln His Asp Gln Leu Ser Arg Gly Cys Leu Leu Pro Phe Leu 105 Leu \* 113

<210> 1921 <211> 139 <212> PRT <213> Homo sapiens

<400> 1921 Met Val Tyr Leu Tyr Ile Tyr Leu Asp Leu Phe Gln Phe Leu Ile Thr 1.0 Val Leu Gln Gly Phe Leu Phe Val Phe Glu Met Glu Phe His Ser Cys 25 Arg Pro Gly Gln Ser Ala Met Met Gln Ser Gln Leu Ala Ala Thr Ser 40 35 Ala Ser Arg Val Gln Val Ile Leu Val Val Ser Ala Pro Gln Glu Ala 55 Gly Thr Thr Gly Ala Arg His His Val Gln Leu Ile Phe Val Phe Leu 70 Leu Glu Met Gly Phe Cys His Val Gly Gln Ala Gly Leu Glu Leu Leu 90 Asn Ser Gly Asp Pro Pro Thr Ser Ala Ser Gln Ser Ala Gly Ile Arg 100 105 Gly Val Asn His Cys Ala Pro Pro Ile Asn Ser Leu Leu Thr Phe Gln 120 Ser Phe Ile His Leu Glu Cys Ile Val Ile \* 135

<210> 1922 <211> 52 <212> PRT <213> Homo sapiens

<210> 1923 <211> 71 <212> PRT <213> Homo sapiens

35 40 45

Tyr Leu Leu Phe Phe Leu Trp Thr Phe Lys Leu Phe Ser Gly Phe Thr
50 55 60

Leu Lys Ile Ile Gln Gln \*
65 70

<210> 1924 <211> 187 <212> PRT <213> Homo sapiens

4

<400> 1924 Met Leu Phe Ile Gln Tyr Leu Leu Pro Cys Leu Leu Leu Ser Ala Glu 10 Leu Ser Gly Thr Phe Phe Leu Tyr Asn Thr Cys His Leu His Val Pro 20 25 Cys Cys His Ser Leu Val Pro Thr Gly Pro Pro Ser Leu Ser Ser His 35 40 Phe Gln Ser Arg Gly Leu Cys Ala Pro Cys Ala Ser Ile Ala Asp Ser 55 60 Gly Ile Ala Asp Ser Gly Gly Asn Asn Leu Asn Phe Val Gly Ala Gly 70 Gly Val Ala Ser Gly His Leu Leu Ser Pro Leu Leu Gly Pro Gln Ser 85 90 95 Ser Pro Cys Pro His Cys Pro Arg Gly Gly Arg Leu Pro Ser Gln Pro 105 110 Leu Pro Leu Cys Ser Ala Arg Ser Trp Ala Gln Glu Ala Leu Arg Leu 120 125 Pro Ser Ser Ala Gln Leu Cys Pro Cys His Pro Leu Pro Arg Gly Leu 135 140 Gly Pro Val Ser Pro Ser Gly Leu Leu Ala Asn Ile Ser Tyr Arg His 145 150 155 Asn Trp Leu Leu Gly Ser Trp Pro Gly Trp Leu Ile Trp Gly Gly Lys 165 170 Asn Arg Gly Gly Leu Asn Ser Phe Leu Ala 185 186

<210> 1925 <211> 50 <212> PRT <213> Homo sapiens

<210> 1926 <211> 47 <212> PRT <213> Homo sapiens

<210> 1927 <211> 149 <212> PRT <213> Homo sapiens

<400> 1927 Met Ala Thr Gly Leu Leu Ala Phe Leu Gly Leu Ala Ala Gly Gly Gln 5 10 15 Thr Leu Cys Pro Ala Gly Glu Leu Pro Gly His Ala Arg Ala Gln Ala 20 Ser Gly Ala Pro Gly Ser Val Leu Ile Ala Val Pro Gly Arg Arg Arg 35 40 45 Val His Thr Cys Gly Pro Gly Pro Ala Ala Pro Ser Thr Arg Gly Glu 55 Cys Pro Pro Pro Ala Leu Gly His Thr Arg Pro Ala Arg Pro Arg Pro 75 70 Val Leu Leu Arg Pro Ser Cys Ser Pro Gly Ala Arg Gly Ala Gly Thr 85 90 Trp Cys Cys Ala Pro Ala Thr Gly His Ser Ala Pro Arg Gly Cys Pro 100 105 Pro Ala Arg Ala Ala Pro Thr Gly Ser Ala Thr Pro Ala Pro Pro Pro 115 120 125 Ala Ala Cys Ala Ala Phe His Ser Ala Trp Ser Val Pro Pro Ala Gly 130 135 140 Arg Gln Gln Gly \* 145 148

<210> 1928 <211> 446 <212> PRT <213> Homo sapiens

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40
Ile Ala Glu Cys Cys Ser Thr Pro Tyr Ser Leu Leu Gly Leu Val Phe
                      55
                                         60
Thr Val Ser Phe Val Ala Leu Gly Val Leu Thr Leu Cys Lys Phe Tyr
                  70
                                     75
Leu Gln Gly Tyr Arg Ala Phe Met Asn Asp Pro Ala Met Asn Arg Gly
               85
                                  90
Met Thr Glu Gly Val Thr Leu Leu Ile Leu Ala Val Gln Thr Gly Leu
          100
                             105
Ile Glu Leu Gln Val Val His Arg Ala Phe Leu Leu Ser Ile Ile Leu
                         120
                                           125
Phe Ile Val Val Ala Ser Ile Leu Gln Ser Met Leu Glu Ile Ala Asp
            135
                                        140
Pro Ile Val Leu Ala Leu Gly Ala Ser Arg Asp Lys Ser Leu Trp Lys
                 150
                                    155
His Phe Arg Ala Val Ser Leu Cys Leu Phe Leu Leu Val Phe Pro Ala
             165
                                 170
Tyr Met Ala Tyr Met Ile Cys Gln Phe Phe His Met Asp Phe Trp Leu
                            185
          180
Leu Ile Ile Ile Ser Ser Ser Ile Leu Thr Ser Leu Gln Val Leu Gly
      195 200
                                            205
Thr Leu Phe Ile Tyr Val Leu Phe Met Val Glu Glu Phe Arg Lys Glu
                   215
                                     220
Pro Val Glu Asn Met Asp Asp Val Ile Tyr Tyr Val Asn Gly Thr Tyr
                 230
                                    235
Arg Leu Leu Glu Phe Leu Val Ala Leu Cys Val Val Ala Tyr Gly Val
               245
                                 250
Ser Glu Thr Ile Phe Gly Glu Trp Thr Val Met Gly Ser Met Ile Ile
           260
                             265
Phe Ile His Ser Tyr Tyr Asn Val Trp Leu Arg Ala Gln Leu Gly Trp
                         280
Lys Ser Phe Leu Leu Arg Arg Asp Ala Val Asn Lys Ile Lys Ser Leu
                     295
                                        300
Pro Ile Ala Thr Lys Glu Gln Leu Glu Lys His Asn Asp Ile Cys Ala
                 310
                                    315
Ile Cys Tyr Gln Asp Met Lys Ser Ala Val Ile Thr Pro Cys Ser His
              325
                                 330
Phe Phe His Ala Gly Cys Leu Lys Lys Trp Leu Tyr Val Gln Glu Thr
           340
                             345
Cys Pro Leu Cys His Cys His Leu Lys Asn Ser Ser Gln Leu Pro Gly
                         360
Leu Gly Thr Glu Pro Val Leu Gln Pro His Ala Gly Ala Glu Gln Asn
                     375
                                        380
Val Met Phe Gln Glu Gly Thr Glu Pro Pro Gly Gln Glu His Thr Pro
                          395
                 390
Gly Thr Arg Ile Gln Glu Gly Ser Arg Asp Asn Asn Glu Tyr Ile Ala
              405
                                410
Arg Arg Pro Asp Asn Gln Glu Gly Ala Phe Asp Pro Lys Glu Tyr Pro
                            425
His Ser Ala Lys Asp Glu Ala His Pro Val Glu Ser Ala *
                         440
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<210> 1929 <211> 120 <212> PRT <213> Homo sapiens

<400> 1929 Met Val Leu Pro Leu Pro Trp Leu Ser Arg Tyr His Phe Leu Arg Leu . 5 10 Leu Leu Pro Ser Trp Ser Leu Ala Pro Gln Gly Ser His Gly Cys Cys 25 Ser Gln Asn Pro Lys Ala Ser Met Glu Glu Gln Thr Asn Ser Arg Gly 40 Asn Gly Lys Met Thr Ser Pro Pro Arg Gly Pro Gly Thr His Arg Thr Ala Glu Leu Ala Arg Ala Glu Glu Leu Leu Glu Gln Gln Leu Glu Leu Tyr Gln Ala Leu Leu Glu Gly Gln Glu Gly Ala Trp Glu Ala Gln Ala 85 90 Leu Val Leu Lys Ile His Lys Leu Lys Glu Gln Met Arg Arg His Gln 100 105 Glu Ser Leu Gly Gly Gly Ala \*

<210> 1930 <211> 122 <212> PRT <213> Homo sapiens

<400> 1930

Met Thr Trp Leu Val Leu Leu Gly Thr Leu Leu Cys Met Leu Arg Val 5 10 Gly Leu Gly Thr Pro Asp Ser Glu Gly Phe Pro Pro Arg Ala Leu His 20 25 Asn Cys Pro Tyr Lys Cys Ile Cys Ala Ala Asp Leu Leu Ser Cys Thr 40 Gly Leu Gly Leu Gln Asp Val Pro Ala Glu Leu Pro Ala Gly Thr Ala 55 Asp Leu Asp Leu Ser His Asn Ala Leu Gln Arg Met Arg Pro Gly Trp 70 Leu Ala Pro Leu Phe Gln Leu Arg Ala Leu His Leu Asp His Asn Glu 85 90 Leu His Ala Leu Asp Arg Gly Val Phe Val Asn Ala Ser Gly Leu Arg 100 105 Leu Leu Asp Leu Ser Ser Asn Ala Glu Phe 115 120

<210> 1931 <211> 73 <212> PRT <213> Homo sapiens

<400> 1931

 Met Ala Arg Ala Pro Ser Val Ala Leu Ala Gln Leu Trp Leu Ile Cys

 1
 5
 10
 15

 Leu Cys Pro Glu Ser Leu Ala Ser Phe Val Gln Ala Val Pro Trp Lys
 20
 25
 30

 Val Leu Gln Pro Ser Ser Asn Arg Ser Thr Asp Cys Ser Pro His Met

35 40 45

Arg Pro Thr Cys Glu Thr Leu Gly Ser Arg Lys Ala Gln Asp Leu Gly
50 55 60

Ala Gly Tyr Tyr Val Ser Val His \*
65 70 72

<210> 1932 <211> 68 <212> PRT

<213> Homo sapiens

<210> 1933 <211> 47 <212> PRT <213> Homo sapiens

<210> 1934 <211> 86 <212> PRT <213> Homo sapiens

Ala Val His Arg Lys Ala Gly Asp Thr Glu Val Gln Gln Ser Leu Leu 65 70 75 80

Leu Leu Leu Lys Lys \*
85

<210> 1935 <211> 76 <212> PRT <213> Homo sapiens

<210> 1936 <211> 49 <212> PRT <213> Homo sapiens

<210> 1937 <211> 76 <212> PRT <213> Homo sapiens

50 55 60
Glu Ile Lys Phe Tyr Ile Gln Leu Ala Lys Lys Lys
65 70 75 76

<210> 1938 <211> 191 <212> PRT <213> Homo sapiens

<400> 1938 Met Ala Asp Glu Lys Thr Phe Arg Ile Gly Phe Ile Val Leu Gly Leu 10 Phe Leu Leu Ala Leu Gly Thr Phe Leu Met Ser His Asp Arg Pro Gln Val Tyr Gly Thr Phe Tyr Ala Met Gly Ser Val Met Val Ile Gly Gly 40 Ile Ile Trp Ser Met Cys Gln Cys Tyr Pro Lys Ile Thr Phe Val Pro 55 Ala Asp Ser Asp Phe Gln Gly Ile Leu Ser Pro Lys Ala Met Gly Leu 70 75 Leu Glu Asn Gly Leu Ala Ala Glu Met Lys Ser Pro Ser Pro Gln Pro 90 Pro Tyr Val Arg Leu Trp Glu Glu Ala Ala Tyr Asp Gln Ser Leu Pro 100 105 110 Asp Phe Ser His Ile Gln Met Lys Val Met Ser Tyr Ser Glu Asp His 120 125 Arg Ser Leu Leu Ala Pro Glu Met Gly Gln Pro Lys Leu Gly Thr Ser 135 Asp Gly Gly Gly Gly Pro Gly Asp Val Gln Ala Trp Met Glu Ala 150 155 Ala Val Val Ile His Lys Gly Leu Asn Glu Ser Glu Gly Glu Arg Arg 170 165 Leu Thr Gln Ser Trp Pro Gly Pro Leu Ala Cys Pro Gln Gly Pro

185

<210> 1939 <211> 82 <212> PRT <213> Homo sapiens

<210> 1940 <211> 101 <212> PRT <213> Homo sapiens

<400> 1940 Met His Val Cys Leu His Ile Trp Gly Leu Gly Val Cys Val Phe Met 5 10 His Met Met Cys Ala Cys Val Gly Val Tyr Val Cys Pro Phe Met Arg 25 20 Tyr Gly Met Gln Ile Cys Ala Cys Ile His Ala His Ser Cys Ser Ala 40 35 Cys Val Cys Ser Cys Ile Trp Cys Met His Gly Cys Ser Tyr Leu Trp 55 Gly Thr Gly Ile Met His Val Cys Ser Ser Val Trp. Gly Val Gly Ile 70 75 Pro Gly Leu Trp Pro Glu Ala Pro Leu Gln Asp Thr Ala Pro Cys Arg 90 Leu Pro Arg Gly 100

<210> 1941 <211> 88 <212> PRT <213> Homo sapiens

<400> 1941 Met Lys Ala Ser Val Leu Ser Pro Ser Phe Leu Leu Val Leu Trp Ser **1** 5 ′ 10 15 Cys Phe Leu Ser Cys Ser Cys Met Glu Pro Gln Ser Gly Phe Pro Arg 25 Pro Ser Cys Phe Thr Val Gly Phe Leu Leu Arg Arg Arg Thr Lys Thr 35 40 Arg Arg Gln Lys Ala Thr Asn Thr Val Lys Met Arg Thr Thr Lys Ile 55 Leu Lys Ile Lys Ile Asp Lys Arg Arg Trp Pro Thr Arg Met Ser Ser 75 -70 Lys Trp Asn Pro Lys Glu Trp \* 85

<210> 1942 <211> 46 <212> PRT <213> Homo sapiens

 $^{<\!400>}$  1942 Met Arg Ser Met Gly Phe Arg Ala Gln Gly Leu Pro Phe Gly Ile Arg 1 5 10 15 Gln Thr Trp Leu Arg Ile Leu Asp Leu Leu Leu Thr Cys Thr Leu Pro 20 25 30
Phe Gly Ser Arg Asp Val Lys Trp Arg Cys Cys His Leu \*
35 40 45

<210> 1943 <211> 155 <212> PRT <213> Homo sapiens

<400> 1943

Met Phe Thr Leu Leu Val Leu Leu Ser Gln Leu Pro Thr Val Thr Leu 10 Gly Phe Pro His Cys Ala Arg Gly Pro Lys Ala Ser Lys His Ala Gly 20 25 Glu Glu Val Phe Thr Ser Lys Glu Glu Ala Asn Phe Phe Ile His Arg 35 40 45 Arg Leu Leu Tyr Asn Arg Phe Asp Leu Glu Leu Phe Thr Pro Gly Asn 55 60 Leu Glu Arg Glu Cys Asn Glu Glu Leu Cys Asn Tyr Glu Glu Ala Arg 75 Glu Ile Phe Val Asp Glu Asp Lys Thr Ile Ala Phe Trp Gln Glu Tyr 85 90 Ser Ala Lys Gly Pro Thr Thr Lys Ser Asp Gly Asn Arg Glu Lys Ile 100 105 110 Asp Val Met Gly Leu Leu Thr Gly Leu Ile Ala Ala Gly Val Phe Leu 120 125

Val Ile Phe Gly Leu Leu Gly Tyr Tyr Leu Cys Ile Thr Lys Cys Asn 130 135 140

<210> 1944 <211> 61 <212> PRT <213> Homo sapiens

Arg Leu Gln His Pro Cys Ser Ser Ala Val Tyr 145 150 155

<210> 1945 <211> 79 <212> PRT <213> Homo sapiens

 <400> 1945

 Met Gln Leu Ile Leu Trp Leu Pro Trp Tyr Val Asp Gln Thr Phe Cys 15

 10
 10
 15

 15

 His Ser Val Leu Gln Cys Gln Cys Cys Cys Pro Gly Gln Leu Cys Gln Ser Phe 20

 25
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 <

<210> 1946 <211> 72 <212> PRT <213> Homo sapiens

<210> 1947 <211> 56 <212> PRT <213> Homo sapiens

<210> 1948 <211> 48 <212> PRT <213> Homo sapiens

<400> 1948

<210> 1949

<211> 136

<212> PRT

<213> Homo sapiens

<400> 1949

Met Leu Leu Ala Thr Leu Leu Leu Leu Leu Gly Gly Ala Leu Ala 5 10. His Pro Asp Arg Ile Ile Phe Pro Asn His Ala Cys Glu Asp Pro Pro 20 25 Ala Val Leu Leu Glu Val Gln Gly Thr Leu Gln Arg Pro Leu Val Arg Asp Ser Arg Thr Ser Pro Ala Asn Cys Thr Trp Leu Ile Leu Gly Ser 55 Lys Glu Gln Thr Val Thr Ile Arg Phe Gln Lys Leu His Leu Ala Cys 70 75 Gly Ser Glu Arg Leu Thr Leu Arg Ser Pro Leu Gln Pro Leu Ile Ser 90 Leu Cys Glu Ala Pro Pro Ser Pro Leu Gln Leu Pro Gly Gly Asn Val 100 105 Thr Ile Thr Tyr Ser Tyr Ala Gly Ala Lys Arg Pro Gln Gly His Gly 115 120 Phe Phe Cys Phe Leu Lys Ala Lys

<210> 1950

<211> 78

<212> PRT

<213> Homo sapiens

<400> 1950

<210> 1951

<211> 89 <212> PRT <213> Homo sapiens

<210> 1952 <211> 47 <212> PRT <213> Homo sapiens

85

<210> 1953 <211> 56 <212> PRT <213> Homo sapiens

<210> 1954 <211> 425 <212> PRT <213> Homo sapiens

<400> 1954 Met Thr Leu Arg Pro Gly Thr Met Arg Leu Ala Cys Met Phe Ser Ser 10 Ile Leu Leu Phe Gly Ala Ala Gly Leu Leu Phe Ile Ser Leu Gln 20 25 Asp Pro Thr Glu Leu Ala Pro Gln Gln Val Pro Gly Ile Lys Phe Asn 40 Ile Arg Pro Arg Gln Pro His His Asp Leu Pro Pro Gly Gly Ser Gln 55 Asp Gly Asp Leu Lys Glu Pro Thr Glu Arg Val Thr Arg Asp Leu Ser Ser Gly Ala Pro Arg Gly Arg Asn Leu Pro Ala Pro Asp Gln Pro Gln 90 Pro Pro Leu Gln Arg Gly Thr Arg Leu Arg Leu Arg Gln Arg Arg 105 110 Arg Leu Leu Ile Lys Lys Met Pro Ala Ala Ala Thr Ile Pro Ala Asn 120 125 Ser Ser Asp Ala Pro Phe Ile Arg Pro Gly Pro Gly Thr Leu Asp Gly 135 140 Arg Trp Val Ser Leu His Arg Ser Gln Gln Glu Arg Lys Arg Val Met 150 155 Gln Glu Ala Cys Ala Lys Tyr Arg Ala Ser Ser Ser Arg Arg Ala Val 170 165 Thr Pro Arg His Val Ser Arg Ile Phe Val Glu Asp Arg His Arg Val 185 . Leu Tyr Cys Glu Val Pro Lys Ala Gly Cys Ser Asn Trp Lys Arg Val 195 200 Leu Met Val Leu Ala Gly Leu Ala Ser Ser Thr Ala Asp Ile Gln His 215 220 Asn Thr Val His Tyr Gly Ser Ala Leu Lys Arg Leu Asp Thr Phe Asp 230 235 Arg Gln Gly Ile Leu His Arg Leu Ser Thr Tyr Thr Lys Met Leu Phe 250 Val Arg Glu Pro Phe Glu Arg Leu Val Ser Ala Phe Arg Asp Lys Phe 265 Glu His Pro Asn Ser Tyr Tyr His Pro Val Phe Gly Lys Ala Ile Leu 280 285 Ala Arg Tyr Arg Ala Asn Ala Ser Arg Glu Ala Leu Arg Thr Gly Ser 295 300 Gly Val Arg Phe Pro Glu Phe Val Gln Tyr Leu Leu Asp Val His Arg 310 315 Pro Val Gly Met Asp Ile His Trp Asp His Val Ser Arg Leu Cys Ser 325 330 Pro Cys Leu Ile Asp Tyr Asp Phe Val Gly Lys Phe Glu Ser Met Glu 340 345 Asp Asp Ala Asn Phe Phe Leu Ser Leu Ile Arg Ala Pro Arg Asn Leu 360 365 Thr Phe Pro Arg Phe Lys Asp Arg His Ser Gln Glu Ala Arg Thr Thr 375 · 380 Ala Arg Ile Ala His Gln Tyr Phe Ala Gln Leu Ser Ala Leu Gln Arg 390 395 Gln Arg Thr Tyr Asp Phe Tyr Tyr Met Asp Tyr Leu Met Phe Asn Tyr 405 410 Ser Lys Pro Phe Ala Asp Leu Tyr \* 420

<210> 1955 <211> 106 <212> PRT <213> Homo sapiens

 <400> 1955

 Met
 Val
 Cys
 Phe
 Leu
 Phe
 Ile
 Thr
 Pro
 Leu
 Ala
 Ala
 Ile
 Ser
 Gly
 Trp

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 Cys
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 Arg
 Gly
 Ala
 Gln
 Asp
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 Leu
 Arg
 Leu
 His
 Ser
 Gln
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 Glu
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 Val
 Gly
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<210> 1956 <211> 139 <212> PRT <213> Homo sapiens

<400> 1956 Met Val Leu Pro Phe Ile Cys Asn Leu Leu Arg Arg His Pro Ala Cys 1 5 10 Arg Val Leu Val His Arg Pro His Gly Pro Glu Leu Asp Ala Asp Pro 25 Tyr Asp Pro Gly Glu Glu Asp Pro Ala Gln Ser Arg Ala Leu Glu Ser 40 Ser Leu Trp Glu Leu Gln Ala Leu Gln Arg His Tyr His Pro Glu Val 55 Ser Lys Ala Ala Ser Val Ile Asn Gln Ala Leu Ser Met Pro Glu Val 70 75 Ser Ile Ala Pro Leu Leu Glu Leu Thr Ala Tyr Glu Ile Phe Glu Arg 85 90 Asp Leu Lys Lys Gly Pro Glu Pro Val Pro Thr Gly Val Leu Ser 105 100 Gln Pro Arg Ala Cys Trp Asp Gly Arg Val Lys Leu Cys Ala Gln His 120 Phe His Ala Gln Leu Thr Leu Ala His Leu \* 130 135 138

<210> 1957
<211> 87
<212> PRT
<213> Homo sapiens

<210> 1958 <211> 48 <212> PRT <213> Homo sapiens

<210> 1959 <211> 65 <212> PRT <213> Homo sapiens

<210> 1960 <211> 78 <212> PRT <213> Homo sapiens

<400> 1960

<210> 1961 <211> 77 <212> PRT <213> Homo sapiens

<210> 1962 <211> 65 <212> PRT <213> Homo sapiens

Met Phe Ser Ala Val Phe Pro Ala Val Ser Cys Gln Ile Ser Leu Leu 1
Ser Thr Cys Asn Ser Leu Gln His Phe Pro Tyr Ala Gly Val Leu Cys 20
Phe Arg Pro Val Leu Cys Leu Cys Pro Gly Gln Asp Phe Cys Gly Asn 35
Val Arg Cys Gln Trp Arg Leu Leu Ala Gly Val Asp Val Ser Asp Val 50

64

<210> 1963 <211> 53 <212> PRT <213> Homo sapiens <221> misc\_feature

<222> (1)...(53) <223> Xaa = any amino acid or nothing

<210> 1964 <211> 232 <212> PRT <213> Homo sapiens

<400> 1964
Met Pro Ser Val His Arg Leu Leu Gly Pro Gln Pro Val Pro Ser Arg

5 10 Arg Leu Arg Leu Ala Leu Leu Leu Ser Leu Gln Val Val Val 25 Phe Phe Leu Val Val Leu Gly Gln Gly Arg Leu Leu Gln Pro Cys Arg 40 Gly Cys Leu Glu Leu Pro Gly Gly Pro Gly Glu Ala Glu Asp His Gly 55 Asp Leu Gly Gln Gly Trp Val Gly Leu Leu Gln Ala Leu Asp Pro Leu 70 75 Ser His Arg Arg Leu Val Met Ser Thr Arg His Ala His Gly Glu Asp 85 90 Arg Ala Phe Leu His Phe Ile Asp Val Lys Leu Val Val Val Pro Ala 100 105 Thr Pro His Ile Leu Gln Val Gln Leu His Arg Val Val Glu Val Pro 120 125 Leu Leu Arg Arg Leu Phe His Phe Pro Leu Leu Arg Gly Gln Gln Val 135 140 Ser Ser Glu Asp Val Val Ile His Thr Leu Val Ala Glu Pro Gln Gly 150 155 Glu Gly Ala Leu Asn Lys Asp Arg Pro Gly Trp Ile Val Ala Gly Gln 165 170 Gly Gly Leu Leu Ile Gly Thr Leu Asp Ser Trp Cys Gly Asp Ile His 180 185 190 Ala Leu Cys Pro Thr Met Trp Gly Trp Gly Gly Ser Ala Ala Pro Val 200 205 Glu Ser Leu Gly Lys Gly Thr Ser Gly Glu Gly Asp Gly Arg Arg Gln 215 Gly Gln Arg Thr Gly Pro Gly \* 230 231

<210> 1965 <211> 253 <212> PRT

## <213> Homo sapiens

<400> 1965 Met Gly Cys Ala Ile Ile Ala Gly Phe Leu His Tyr Leu Phe Leu Ala 10 Cys Phe Phe Trp Met Leu Val Glu Ala Val Ile Leu Phe Leu Met Val 25 20 Arg Asn Leu Lys Val Val Asn Tyr Phe Ser Ser Arg Asn Ile Lys Met 40 Leu His Ile Cys Ala Phe Gly Tyr Gly Leu Pro Met Leu Val Val Val 60 55 Ile Ser Ala Ser Val Gln Pro Gln Gly Tyr Gly Met His Asn Arg Cys . 70 75 Trp Leu Asn Thr Glu Thr Gly Phe Ile Trp Ser Phe Leu Gly Pro Val 90 85 Cys Thr Val Ile Val Ile Asn Ser Leu Leu Leu Thr Trp Thr Leu Trp 105 100 Ile Leu Arg Gln Arg Leu Ser Ser Val Asn Ala Glu Val Ser Thr Leu 120 125 Lys Asp Thr Arg Leu Leu Thr Phe Lys Ala Phe Ala Gln Leu Phe Ile 140 135 Leu Gly Cys Ser Trp Val Leu Gly Ile Phe Gln Ile Gly Pro Val Ala 155 150 Gly Val Met Ala Tyr Leu Phe His His Gln Gln Pro Ala Gly Gly 170 165 Leu His Leu Pro His Pro Leu Ser Ala Gln Arg Pro Gly Thr Arg Arg 185 180 Ile Gln Glu Val Asp His Trp Glu Asp Glu Ala Gln Leu Pro Val Pro 200 195 Asp Leu Lys Asp Leu Ala Val Leu His Ala Ile Arg Phe Gln Asp Gly 220 215 Leu Lys Ser Phe Leu Ala Phe Lys Tyr Ala Met Glu Pro Thr Val Gly 230 235 Gly Thr Ser Ser Phe Pro Cys Arg Glu Pro Tyr Pro 250

<210> 1966 <211> 649 <212> PRT <213> Homo sapiens

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100
                               105
Asn Ser Leu Tyr Leu Ala Thr Ile Ser Leu Lys Ile Val Ala Phe Val
                           120
Lys Tyr Ser Ala Leu Asn Pro Arg Glu Ser Trp Asp Met Trp His Pro
                       135
                                          140
Thr Leu Val Ala Glu Ala Leu Phe Ala Ile Ala Asn Ile Phe Ser Ser
                  150
                                      155
Leu Arg Leu Ile Ser Leu Phe Thr Ala Asn Ser His Leu Gly Pro Leu
                                  170
              165
                                                      175
Gln Ile Ser Leu Gly Arg Met Leu Leu Asp Ile Leu Lys Phe Leu Phe
                              185
           180
Ile Tyr Cys Leu Val Leu Leu Ala Phe Ala Asn Gly Leu Asn Gln Leu
                          200
Tyr Phe Tyr Tyr Glu Glu Thr Lys Gly Leu Thr Cys Lys Gly Ile Arg
                       215
                                          220
Cys Glu Lys Gln Asn Asn Ala Phe Ser Thr Leu Phe Glu Thr Leu Gln
225
                  230
                                      235
Ser Leu Phe Trp Ser Ile Phe Gly Leu Ile Asn Leu Tyr Val Thr Asn
               245
                                   250
Val Lys Ala Gln His Glu Phe Thr Glu Phe Val Gly Ala Thr Met Phe
           260
                              265
Gly Thr Tyr Asn Asp Ile Ser Leu Val Val Leu Leu Asn Met Leu Ile
                           280
Ala Met Met Asn Asn Ser Tyr Gln Leu Ile Ala Asp His Ala Asp Ile
                       295
                                           300
Glu Trp Lys Phe Ala Arg Thr Lys Leu Trp Met Ser Tyr Phe Glu Glu
                   310
                                       315
Gly Gly Thr Leu Pro Thr Pro Phe Asn Val Ile Pro Ser Pro Lys Ser
               325
                                   330
Leu Trp Tyr Leu Ile Lys Trp Ile Trp Thr His Leu Cys Lys Lys Lys
           340
                              345
Met Arg Arg Lys Pro Glu Ser Phe Gly Thr Ile Gly Arg Arg Ala Ala
                          360
                                               365
Asp Asn Leu Arg Arg His His Gln Tyr Gln Glu Val Met Arg Asn Leu
                       375
                                           380
Val Lys Arg Tyr Val Ala Ala Met Ile Arg Asp Ala Lys Thr Glu Glu
                   390
                                       395
Gly Leu Thr Glu Glu Asn Phe Lys Glu Leu Lys Gln Asp Ile Ser Ser
               405
                                   410
Phe Arg Phe Glu Val Leu Gly Leu Leu Arg Gly Ser Lys Leu Ser Thr
           420
                              425
Ile Gln Ser Ala Asn Ala Ser Lys Glu Ser Ser Asn Ser Ala Asp Ser
                          440
Asp Glu Lys Ser Asp Ser Glu Gly Asn Ser Lys Asp Lys Lys Asn
                       455
Phe Ser Leu Phe Asp Leu Thr Thr Leu Ile His Pro Arg Ser Ala Ala
                  470
                                      475
Ile Ala Ser Glu Arg His Asn Ile Ser Asn Gly Ser Ala Leu Val Val
                                  490
               485
Gln Glu Pro Pro Arg Glu Lys Gln Arg Lys Val Asn Phe Val Thr Asp
         500
                              505
Ile Lys Asn Phe Gly Leu Phe His Arg Arg Ser Lys Gln Asn Ala Ala
                           520
                                               525
Glu Gln Asn Ala Asn Gln Ile Phe Ser Val Ser Glu Glu Val Ala Arg
                       535
Gln Gln Ala Ala Gly Pro Leu Glu Arg Asn Ile Gln Leu Glu Ser Arg
                   550
                                       555
Gly Leu Ala Ser Arg Gly Asp Leu Ser Ile Pro Gly Leu Ser Glu Gln
                                   570
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Cys Val Leu Val Asp His Arg Glu Arg Asn Thr Asp Thr Leu Gly Leu 585 580 Gln Val Gly Lys Arg Val Cys Pro Phe Lys Ser Glu Lys Val Val Val 600 605 595 Glu Asp Thr Val Pro Ile Ile Pro Lys Glu Lys His Ala Lys Glu Glu 615 620 Asp Ser Ser Ile Asp Tyr Asp Leu Asn Leu Pro Asp Thr Val Thr His 635 630 Glu Asp Tyr Val Thr Thr Arg Leu \* 648 645

<210> 1967 <211> 80 <212> PRT <213> Homo sapiens

<210> 1968 <211> 49 <212> PRT <213> Homo sapiens

<210> 1969 <211> 150 <212> PRT <213> Homo sapiens

 $<\!\!400\!\!> 1969$  Met His Val His Phe Trp Leu Val Thr Ala Ser Phe Ser Ser Val

10 Ala Trp Thr Thr Ala Glu Ile Thr Gly Gly Val Ser Gly Val Ala Ala 20 25 Gly Val Gly Ser Trp Glu Gly Gly Ser Glu Arg Gly Asp Arg Phe Gly 40 Asp Phe Phe Thr Leu Asn Val Ser Val Phe Arg Gly Val Phe Phe Phe 55 Leu Ala Gly Leu Phe Ser Pro Ser Pro Ser Thr Pro Leu Ala Ser Ile 70 75 Ala Leu Ala Gly Ile Ser Lys Glu Ala Gly Asp Leu Glu Gly Glu Leu 85 90 Gly Val Leu Glu Asp Val Leu Lys Gly Ser Thr Asp Ser Ser Gln Val 105 Ser Gly Ser Lys Leu Tyr Asp Cys Trp Gly Ser Leu Gly Asp Ser Cys 120 125 Ile Phe Glu Val Glu Glu Lys Gly Leu Lys Leu Gly Ser Ser His Leu Ser Ile Ser Lys Val \* 149

<210> 1970

<211> 48

<212> PRT

<213> Homo sapiens

<400> 1970

 Met Phe Gly Ser Arg Gly Leu Leu Cys Met Cys Val Phe Phe Phe Asn
 1
 5
 10
 15

 Ile Leu Ala Ser Gln Cys Lys Val Ile Ser Ser Gly Gly Met Leu Cys
 20
 25
 30

 Cys Arg Thr Pro Thr Leu Leu Asp Tyr Leu Arg Gln His Phe Leu \*
 35
 40
 45
 47

<210> 1971

<211> 64

<212> PRT

<213> Homo sapiens

<400> 1971

<210> 1972

<211> 211

<212> PRT

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<213> Homo sapiens
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<221> misc\_feature

<222> (1) ... (211)

<223> Xaa = any amino acid or nothing

<400> 1972 Met Thr Arg Met Leu Asn Met Leu Ile Val Phe Arg Phe Leu Arg Ile 10 5 Ile Pro Ser Met Lys Pro Met Ala Val Val Ala Ser Thr Val Leu Gly 25 20 Leu Val Gln Asn Met Arg Ala Phe Gly Gly Ile Leu Val Val Val Tyr 40 35 Tyr Val Phe Ala Ile Ile Gly Ile Asn Leu Phe Arg Gly Val Ile Val 60 55 Ala Leu Pro Gly Asn Ser Ser Leu Ala Pro Ala Asn Gly Ser Ala Pro 75 70 Cys Gly Ser Phe Glu Gln Leu Glu Tyr Trp Ala Asn Asn Phe Asp Asp 90 Phe Xaa Ala Ala Leu Val Thr Leu Trp Asn Leu Met Val Val Asn Asn 110 105 100 Trp Gln Val Phe Leu Asp Ala Tyr Arg Arg Tyr Ser Gly Pro Trp Ser 120 125 Lys Ile Tyr Phe Val Leu Trp Trp Leu Val Ser Ser Val Ile Trp Val 140 135 Asn Leu Phe Leu Ala Leu Ile Leu Glu Asn Phe Leu His Lys Trp Asp 155 150 Pro Arg Ser His Leu Gln Pro Leu Ala Gly Thr Pro Glu Ala Thr Tyr 170 165 Gln Met Thr Val Glu Leu Leu Phe Arg Asp Ile Leu Glu Glu Pro Gly 185 180 Glu Asp Glu Leu Thr Glu Arg Leu Ser Gln His Pro His Leu Trp Leu 200 205 Cys Arg \* 210

<210> 1973 <211> 53

<212> PRT

<213> Homo sapiens

<210> 1974 <211> 50

<212> PRT <213> Homo sapiens

<210> 1975 <211> 87 <212> PRT <213> Homo sapiens

<400> 1975 Met Cys Ser Ser Pro Ala Val Leu Cys Ala Leu Val Val Gly Cys 5 10 Pro Val Gly Phe Pro His Glu Ala Asp Pro Gly Ser Met Gln Arg Ala 20 25 Ser Ser Leu Gly Leu His Gln Ala Ser Val Val Ser Ala Gly Trp Leu 40 45 Gly Gln Ala Arg His Gly Ala His Leu Gly Cys Ser Leu Leu Pro Ser 55 60 Gly Val His Gly Leu Trp Arg Pro Ser Val Gln Pro Arg Arg Asp Pro 70 Val Thr Glu Leu Gln Cys 85 86

<210> 1976 <211> 107 <212> PRT <213> Homo sapiens

<400> 1976 Met Ala Leu Tyr Glu Leu Phe Ser His Pro Val Glu Arg Ser Tyr Arg 5 10 Ala Gly Leu Cys Ser Lys Ala Ala Leu Phe Leu Leu Leu Ala Ala Ala 20 25 Leu Thr Tyr Ile Pro Pro Leu Leu Val Ala Phe Arg Ser His Gly Phe 35 Trp Leu Lys Arg Ser Ser Tyr Glu Glu Gln Pro Thr Val Arg Phe Gln 55 His Gln Val Leu Leu Val Ala Leu Leu Gly Pro Glu Ser Asp Gly Phe 70 75 Leu Ala Trp Ser Thr Phe Pro Ala Phe Asn Arg Gln Gln Gly Asp Arg 85 90 Leu Arg Val Pro Leu Val Ser Trp Arg Arg

<210> 1977 <211> 134 <212> PRT <213> Homo sapiens

<400> 1977 Met Val Thr Val Ala Met Ala Cys Ser Gly Ala Leu Thr Ala Leu Cys 10 Cys Leu Phe Val Ala Met Gly Val Leu Arg Val Pro Trp His Cys Pro 25 Leu Leu Val Thr Glu Gly Leu Leu Asp Met Leu Ile Ala Gly Gly 40 Tyr Ile Pro Ala Leu Tyr Phe Tyr Phe His Tyr Leu Ser Ala Ala Tyr Gly Ser Pro Val Cys Lys Glu Arg Gln Ala Leu Tyr Gln Ser Lys Gly 70 75 Tyr Ser Gly Phe Gly Cys Ser Phe His Gly Ala Asp Ile Gly Ala Gly 90 85 Ile Phe Ala Ala Leu Gly Ile Val Val Phe Ala Leu Gly Ala Val Leu 105 Ala Ile Lys Gly Tyr Arg Lys Val Arg Lys Leu Lys Glu Lys Pro Ala Glu Met Phe Glu Phe \* 1.33 130

<210> 1978 <211> 61 <212> PRT <213> Homo sapiens

<210> 1979 <211> 66 <212> PRT <213> Homo sapiens

<210> 1980 <211> 51 <212> PRT <213> Homo sapiens

<210> 1981 <211> 79 <212> PRT <213> Homo sapiens

<210> 1982 <211> 156 <212> PRT <213> Homo sapiens

<210> 1983 <211> 63 <212> PRT <213> Homo sapiens

<210> 1984 <211> 232 <212> PRT <213> Homo sapiens

<400> 1984 Met Phe His Arg Cys Gly Ile Met Ala Leu Val Ala Ala Tyr Leu Asn 10 Phe Val Ser Gln Met Ile Ala Val Pro Ala Phe Cys Gln His Val Ser 25 Lys Val Ile Glu Ile Arg Thr Met Glu Ala Pro Tyr Phe Leu Pro Glu 40 His Ile Phe Arg Asp Lys Cys Met Leu Pro Lys Ser Leu Glu Lys His 55 60 Glu Lys Asp Leu Tyr Phe Leu Thr Asn Lys Ile Ala Glu Ser Leu Gly 70 75 Gly Lys Trp Asp Ile Val Leu Arg Asp Cys Gln Phe Arg Met Leu Pro 90 85 Gln Val Thr Asp Glu Asp Arg Leu Ser Arg Arg Lys Ser Ile Val Asp 105 Thr Val Ser Ile Gln Val Asp Ile Leu Ser Asn Asn Val Pro Ser Asp

115 120 Asp Val Val Ser Asn Thr Glu Glu Ile Thr Phe Glu Ala Leu Lys Lys 135 140 Ala Ile Asp Thr Ser Gly Met Glu Glu Glu Lys Glu Lys Arg Arg 150 155 Leu Val Ile Glu Lys Phe Gln Lys Ala Pro Phe Glu Glu Ile Ala Ala 165 170 Gln Cys Glu Ser Lys Ala Asn Leu Leu His Asp Arg Leu Ala Gln Ile 180 185 190 Leu Glu Leu Thr Ile Arg Pro Pro Pro Ser Pro Ser Gly Thr Leu Thr 200 205 Ile Thr Ser Gly His Ala Gln Tyr Gln Ser Val Pro Val Tyr Glu Met 215 Lys Phe Pro Asp Leu Cys Val Tyr 230 232

<210> 1985 <211> 141 <212> PRT <213> Homo sapiens

<400> 1985 Met Asn Leu Ser Leu Pro Phe Leu Cys Leu Phe Leu Leu Ser Phe Ser 10 Phe Lys Leu Ala Leu Gln Leu Arg Lys Val Ser Leu Leu Ser Leu Arg 20 25 Leu Trp Gly Gln Ser Ile Cys Cys Leu Glu Lys Glu Gly Asn Gln Asp 40 Ser Ser Gly Thr Gln Met Ser Ser Ser Leu Ala Leu Leu Asn Pro Leu 55 60 Leu His Asn Trp Ser Phe Ile Leu Ala Leu Asn Asp Pro Ala Gly His 70 His Gly Phe Leu Phe Leu Leu Val Phe Phe Phe Ser Glu Thr Glu Ser 85 90 His Ser Val Thr Gln Ala Gly Val Gln Trp Arg Asp Leu Ser Ser Leu 100 105 110 Gln Pro Leu Pro Pro Gly Phe Lys Arg Phe Phe Cys Leu Ser Leu Pro 120 Ser Ser Trp Asp Tyr Arg Cys Ala Thr Thr Pro Gly \* 135

<210> 1986 <211> 292 <212> PRT <213> Homo sapiens

Asn Glu Thr Leu Lys His Leu Thr Asn Asp Thr Thr Pro Glu Ser 60 55 Thr Met Thr Ser Gly Gln Ala Arg Ala Ser Thr Gln Ser Pro Gln Ala 75 Leu Glu Asp Ser Gly Pro Val Asn Ile Ser Val Ser Ile Thr Leu Thr 85 Leu Asp Pro Leu Lys Pro Phe Gly Gly Tyr Ser Arg Asn Val Thr His 105 Leu Tyr Ser Thr Ile Leu Gly His Gln Ile Gly Leu Ser Gly Arg Glu 120 115 Ala His Glu Glu Ile Asn Ile Thr Phe Thr Leu Pro Thr Ala Trp Ser 135 140 Ser Asp Asp Cys Ala Leu His Gly His Cys Glu Gln Val Val Phe Thr 150 155 Ala Cys Met Thr Leu Thr Ala Ser Pro Gly Val Phe Pro Val Thr Val 170 165 Gln Pro Pro His Cys Val Pro Asp Thr Tyr Ser Asn Ala Thr Leu Trp 185 180 Tyr Lys Ile Phe Thr Thr Ala Arg Asp Ala Asn Thr Lys Tyr Ala Gln 200 Asp Tyr Asn Pro Phe Trp Cys Tyr Lys Gly Ala Ile Gly Lys Val Tyr 215 220 His Ala Leu Asn Pro Lys Leu Thr Val Ile Val Pro Asp Asp Asp Arg 235 230 Ser Leu Ile Asn Leu His Leu Met His Thr Ser Tyr Phe Leu Phe Val 245 250 Met Val Ile Thr Met Phe Cys Tyr Ala Val Ile Lys Gly Arg Pro Ser 265 Lys Leu Arg Gln Ser Asn Pro Glu Phe Cys Pro Glu Lys Val Ala Leu 275 280 Ala Glu Ala \* 290 291

<210> 1987 <211> 186 <212> PRT <213> Homo sapiens

<400> 1987

Met Ala Gly Pro Arg Pro Arg Trp Arg Asp Gln Leu Leu Phe Met Ser Ile Ile Val Leu Val Ile Val Val Ile Cys Leu Met Leu Tyr Ala Leu 25 Leu Trp Glu Ala Gly Asn Leu Thr Asp Leu Pro Asn Leu Arg Ile Gly 40 Phe Tyr Asn Phe Cys Leu Trp Asn Glu Asp Thr Ser Thr Leu Gln Cys 60 55 His Gln Phe Pro Glu Leu Glu Ala Leu Gly Val Pro Arg Val Gly Leu 70 75 . Gly Leu Ala Arg Leu Gly Val Tyr Gly Ser Leu Val Leu Thr Leu Phe 90 Ala Pro Gln Pro Leu Leu Ala Gln Cys Asn Ser Asp Glu Arg Ala 105 Trp Arg Leu Ala Val Gly Phe Leu Ala Val Ser Ser Val Leu Leu Ala 120 125 Gly Gly Leu Gly Leu Phe Leu Ser Tyr Val Trp Lys Trp Val Arg Leu

<210> 1988 <211> 47 <212> PRT

<213> Homo sapiens

<210> 1989 <211> 58 <212> PRT <213> Homo sapiens

<210> 1990 <211> 80 <212> PRT <213> Homo sapiens

Thr His Trp Ala Val Cys Gly Cys Gly Phe Ile Ser Glu Lys Leu \* 65 70 75 79

<210> 1991 <211> 48 <212> PRT <213> Homo sapiens

<210> 1992 <211> 51 <212> PRT <213> Homo sapiens

<210> 1993 <211> 79 <212> PRT <213> Homo sapiens

<210> 1994 <211> 52 <212> PRT <213> Homo sapiens

<400> 1994

 Met
 Thr
 Ser
 Leu
 Gln
 Lys
 Arg
 Leu
 Leu
 Ser
 His
 Cys
 Met
 Gln
 Cys
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 Met
 Leu
 Leu
 Gly
 Ile
 Cys
 Gly
 Gln
 Cys
 Lys
 Asp
 Asp
 Asp
 Ile
 Leu
 Ala

 Ser
 Trp
 Val
 Ile
 Gln
 Glu
 Phe
 Thr
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<210> 1995 <211> 164 <212> PRT <213> Homo sapiens

<400> 1995

Met Leu Leu Ala Thr Leu Leu Leu Leu Leu Gly Gly Ala Leu Ala 10 His Pro Asp Arg Ile Ile Phe Pro Asn His Ala Cys Glu Asp Pro Pro 20 25 Ala Val Leu Glu Val Gln Gly Thr Leu Gln Arg Pro Leu Val Arg 40 Asp Ser Arg Thr Ser Pro Ala Asn Cys Thr Trp Leu Ile Leu Gly Ser 55 Lys Glu Arg Thr Val Thr Ile Arg Phe Gln Lys Leu His Leu Ala Cys 70 75 Gly Ser Glu Arg Leu Thr Leu Arg Ser Pro Leu Gln Pro Leu Ile Ser 85 90 Leu Cys Glu Ala Pro Pro Ser Pro Leu Gln Leu Pro Gly Gly Asn Val 105 100 110 Thr Ile Thr Tyr Ser Tyr Ala Gly Gly Gln Ser Thr His Gly Pro Gly 115 120 125 Leu Pro Ala Leu Leu Gln Ala Ser Pro Ser Pro Trp Cys Leu Cys Arg 130 135 140 Leu Ala Asp Val Leu Ala Arg Arg Gly Ser Met Pro Glu Pro Pro Leu 150 155 Cys Ile Cys \* 163

<210> 1996 <211> 77 <212> PRT <213> Homo sapiens

<400> 1996
Met Trp Tyr Gly Val Phe Leu Trp Ala Leu Val Ser Ser Leu Phe Phe
1 5 10 15

<210> 1997 <211> 233 <212> PRT <213> Homo sapiens

<400> 1997 Met Gly Leu Pro Gly Leu Phe Cys Leu Ala Val Leu Ala Ala Ser Ser 10 Phe Ser Lys Ala Arg Glu Glu Glu Ile Thr Pro Val Val Ser Ile Ala 25 Tyr Lys Val Leu Glu Val Phe Pro Lys Gly Arg Trp Val Leu Ile Thr 40 Cys Cys Ala Pro Gln Pro Pro Pro Ile Thr Tyr Ser Leu Cys Gly 55 60 Thr Lys Asn Ile Lys Val Ala Lys Lys Val Val Lys Thr His Glu Pro 75 Ala Ser Phe Asn Leu Asn Val Thr Leu Lys Ser Ser Pro Asp Leu Leu 85 90 Thr Tyr Phe Cys Arg Ala Ser Ser Thr Ser Gly Ala His Val Asp Ser 105 Ala Arg Leu Gln Met His Trp Glu Leu Trp Ser Arg Gln Arg Gly Arg 120 Pro Gln Gly Gly Asp Asp Leu Pro Gly Val Leu Gly Gln Pro Thr Tyr 135 140 His Gln Gln Pro Asp Arg Glu Gly Trp Ala Gly Pro Pro Ala Ala Glu 150 155 Thr Met Pro Gln Glu Ala Cys Gln Leu Ser Pro Ser Cys Arg Ala Arg 165 170 His Arg Thr Trp Phe Trp Cys Gln Ala Cys Lys Gln Arg Gln Cys Ser 180 185 190 Ser Thr Ala Pro Ser Gln Trp Leu Pro Gln Val Val Thr Gln Lys Met 200 Glu Asp Trp Gln Gly Pro Pro Gly Glu Pro His Pro Cys Leu Ala Ala 215 220 Leu Gln Glu His Pro Pro Ser Glu \* 230

<210> 1998 <211> 58 <212> PRT <213> Homo sapiens

<400> 1998
Met Pro Ala Ile Val Val Phe Leu Phe Cys Phe Val Ile Ser Asp Gly

<210> 1999 <211> 66 <212> PRT <213> Homo sapiens

<210> 2000 <211> 106 <212> PRT <213> Homo sapiens

<210> 2001 <211> 88 <212> PRT <213> Homo sapiens

<210> 2002 <211> 85 <212> PRT <213> Homo sapiens

<210> 2003 <211> 46 <212> PRT <213> Homo sapiens

<210> 2004 <211> 51 <212> PRT <213> Homo sapiens

<210> 2005 <211> 66 <212> PRT <213> Homo sapiens

<210> 2006 <211> 46 <212> PRT <213> Homo sapiens

<210> 2007 <211> 87 <212> PRT <213> Homo sapiens

<210> 2008 <211> 58 <212> PRT <213> Homo sapiens

<210> 2009 <211> 46 <212> PRT <213> Homo sapiens

<210> 2010 <211> 235 <212> PRT <213> Homo sapiens

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<210> 2017 <211> 58 <212> PRT <213> Homo sapiens

<210> 2018 <211> 66 <212> PRT <213> Homo sapiens

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## PATENT COOPERATION TREATY

## **PCT**

## DECLARATION OF NON-ESTABLISHMENT OF INTERNATIONAL SEARCH REPORT

(PCT Article 17(2)(a), Rule 13ter.1(c) and 39)

Applicant's or agent's file reference	<u> </u>	Date of mailing (day/month/year)
	IMPORTANT DECLARATION	8 7 JUN 2001
21272-018		g ( 0011 2001
International application No.	International filing date (day/month/year)	(Earliest) Priority date (day/month/year)
PCT/US01/02687	25 January 2001 (25.01.2001)	25 January 2000 (25.01.2000)
International Patent Classification (IPC) or both national classification and IPC		
IPC(7): C12P 21/06 and US C1.: 435/69.1		
Applicant		· .
HYSEQ, INC.		
This International Searching Authority he	ereby declares, according to Article 17(2)(a), that	no international search report
	application for the reasons indicated below.	-
1. The subject matter of the inte	ernational application relates to:	
a. scientific theories.		
b. mathematical theories		
c. plant varieties.		
d. animal varieties.		
e. essential biological processes for the production of plants and animals, other than microbiological processes		
and the products of such processes.		
f. schemes, rules or methods of doing business.  g. schemes, rules or methods of performing purely mental acts.		
g. schemes, rules or methods of performing purely mental acts.  h. schemes, rules or methods of playing games.		
i. methods for treatment of the human body by surgery or therapy.		
j. methods for treatment of the animal body by surgery or therapy.		
k. diagnostic methods practised on the human or animal body.		
l. mere presentations of information.		
m. computer programs for which this International Searching Authority is not equipped to search prior art.		
	parts of the international application to comply w	ith prescribed requirements prevents a
meaningful search from being the description	the claims	the drawings
	e and/or amino acid sequence listing to comply wi	
of the Administrative Instructions prevents a meaningful search from being carried out:		
the written form has not been furnished or does not comply with the standard.  the computer readable form has not been furnished or does not comply with the standard.		
the computer readable form has not been furnished of does not comply with the standard.		
4. Further comments:		
	•	
Name and mailing address of the IS	A/US Authorized of	ficer Dandbard
Commissioner of Patents and Tra		- Die for

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